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# FINAL

# ENVIRONMENTAL STATEMENT

Proposed

# SIGURD TO CEDAR CITY POWER TRANSMISSION LINE

STATE OF UTAH

Prepared by
Bureau of Land Management
Department of the Interior

Curt Berklund
Director

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Director

BUREAU OF LAND MANAGEMENT
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# SUMMARY

## Final Environmental Statement

1. TYPE OF ACTION: Administrative

2. BRIEF DESCRIPTION OF ACTION:

The proposed action is the construction of a 230 KV (kilovolts) wood pole transmission line from Utah Power and Light Company's Sigurd substation to Cedar City, Utah. Four potential corridors over 100 miles long are described, and environmental impacts for each corridor are identified.

3. SUMMARY OF ENVIRONMENTAL IMPACTS AND ADVERSE ENVIRONMENTAL EFFECTS:

Potential environmental impacts of transmission line construction are electronic interference, temporary air pollution, soil erosion, right-of-way clearing, wildlife disturbance, weed infestations, additional vehicular access, degradation of natural beauty, livestock disturbance, archaeological site damage, and increased fire hazards to public safety. Identified significant, unavoidable adverse impacts are visual pollution, soil disturbance, and vegetation disturbance.

4. MAJOR ALTERNATIVES CONSIDERED:

No action; alternative voltage; alternative structure designs; alternative construction methods; alternative corridors; alternative transmission systems; and energy conservation.

5. LIST OF ALL FEDERAL, STATE, AND LOCAL AGENCIES AND OTHER PARTIES FROM WHICH COMMENTS HAVE BEEN REQUESTED. (FEDERAL AND FEDERAL-STATE AGENCIES WITH JURISDICTION BY LAW OR SPECIAL EXPERTISE ARE LISTED HERE, THE REMAINDER ARE LISTED IN THE APPENDICES F AND G).

*Utah State Clearinghouse
U. S. Department of Agriculture
U. S. Department of the Interior
    *Bureau of Reclamation
    *Bureau of Outdoor Recreation
    *Fish and Wildlife Service
    Geological Survey
U. S. Environmental Protection Agency

6. DATE STATEMENT MADE AVAILABLE TO COUNCIL ON ENVIRONMENTAL QUALITY AND THE PUBLIC:

Draft Statement: February 4, 1975
Final Statement:

*Comments received and attached in Appendix G.

SIGURD TO CEDAR CITY POWER TRANSMISSION LINE
DRAFT ENVIRONMENTAL IMPACT STATEMENT

## Table of Contents

Section Page

I. DESCRIPTION OF THE PROPOSAL ........ 1

A. Proposed Action ........ 1

B. Corridor Alternative ........ 1

1. Sevier Valley Corridor ........ 1
2. Cove Fort Corridor ........ 4
3. Grass Valley Corridor ........ 4
4. West Desert Corridor ........ 4

C. Construction Time Frame ........ 4

D. Survey Activities ........ 4

E. Construction Activities ........ 14

1. Installing Gates and Bridges ........ 14
2. Access ........ 14
3. Excavation and Digging ........ 15
4. Hauling ........ 15
5. Framing ........ 15
6. Erection ........ 15
7. Stringing ........ 15
8. Sagging ........ 15
9. Clipping ........ 16
10. Clean-up and Restoration ........ 19
11. Reseeding ........ 19

F. Line Maintenance ........ 19

G. Interrelationships with Other Projects ........ 19

H. Other Environmental Statements ........ 22

II. DESCRIPTION OF THE ENVIRONMENT ........ 23

A. Sevier Valley Corridor ........ 23

1. Introduction ........ 23
2. Air Quality and Electronic Interference ........ 23

Section Page

3. Geology and Topography .......... 25
4. Climate .......... 25
5. Soil .......... 26
6. Vegetation .......... 27
7. Water .......... 27
8. Wildlife .......... 28
9. Fish .......... 29
10. Livestock .......... 30
11. Scenic and Esthetic Quality .......... 30
    a. Setting .......... 30
    b. Scenic Quality .......... 30
    c. Transportation Routes and Visual Areas .......... 32
12. Recreation Facilities and Sites .......... 32
13. Historical and Archaeological .......... 33
14. Minerals .......... 34
    a. Leasable Minerals .......... 34
    b. Locatable Minerals .......... 34
    c. Salable Minerals .......... 35

B. Cove Fort Corridor .......... 35

1. Introduction .......... 35
2. Air Quality and Electronic Interference .......... 37
3. Geology and Topography .......... 37
4. Climate .......... 38
5. Soil .......... 38
6. Vegetation .......... 39
7. Water .......... 39
8. Wildlife .......... 40
9. Fish .......... 41
10. Livestock .......... 42
11. Scenic and Esthetic Quality .......... 42
    a. Setting .......... 42
    b. Scenic Quality .......... 42
    c. Transportation Routes and Visual Areas .......... 43
12. Recreation Facilities and Sites .......... 44
13. Historical and Archaeological .......... 44
14. Minerals .......... 46
    a. Leasable Minerals .......... 46
    b. Locatable Minerals .......... 46
    c. Salable Minerals .......... 47

C. Grass Valley Corridor .......... 47

1. Introduction .......... 47
2. Air Quality and Electronic Interference .......... 47

Section Page

3. Geology and Topography .................................. 49
4. Climate .................................. 49
5. Soil .................................. 49
6. Vegetation .................................. 50
7. Water .................................. 51
8. Wildlife .................................. 52
9. Fish .................................. 53
10. Livestock .................................. 53
11. Scenic and Esthetic Quality .................................. 53
    a. Setting .................................. 53
    b. Scenic Quality .................................. 54
    c. Transportation Routes and Visual Areas .......... 55
12. Recreation Facilities and Sites .................................. 55
13. Historical and Archaeological .................................. 56
14. Minerals .................................. 57
    a. Leasable Minerals .................................. 57
    b. Locatable Minerals .................................. 57
    c. Salable Minerals .................................. 57

D. West Desert Corridor .................................. 57

1. Introduction .................................. 57
2. Air Quality and Electronic Interference .............. 59
3. Geology and Topography .................................. 59
4. Climate .................................. 60
5. Soil .................................. 61
6. Vegetation .................................. 61
7. Water .................................. 62
8. Wildlife .................................. 62
9. Fish .................................. 62
10. Livestock .................................. 63
11. Scenic and Esthetic Quality .................................. 63
    a. Setting .................................. 63
    b. Scenic Quality .................................. 63
    c. Transportation Routes and Visual Areas .......... 64
12. Recreational Facilities and Sites .................................. 65
13. Historical and Archaeological .................................. 65
14. Minerals .................................. 66
    a. Leasable Minerals .................................. 66
    b. Locatable Minerals .................................. 66
    c. Salable Minerals .................................. 66

E. Future Environment without the Proposal .................. 70

III. ENVIRONMENTAL IMPACT OF THE PROPOSED ACTION.................. 71

A. Air Quality and Electronic Interference .................. 71

B. Geology and Topography .................................. 75

C. Climate .................................. 75

Section Page

D. Soil ........................................ 75

1. Soil Loss .................................... 75
2. Soil Erosion ................................. 75

E. Vegetation ................................... 78

F. Water ........................................ 81

G. Wildlife and Fish ............................ 82

H. Livestock .................................... 87

I. Scenic and Esthetic Quality .................. 88

1. Setting ...................................... 88
2. Scenic Quality ............................... 88
   a. Sevier Valley Corridor .................... 91
   b. Cove Fort Corridor ........................ 91
   c. Grass Valley Corridor ..................... 91
   d. West Desert Corridor ...................... 93
3. Transportation Routes and Visual Areas ....... 93
   a. Sevier Valley Corridor .................... 94
   b. Cove Fort Corridor ........................ 94
   c. Grass Valley Corridor ..................... 94
   d. West Desert Corridor ...................... 94

J. Recreation Facilities and Sites .............. 94

K. Historical and Archaeological ................ 95

L. Minerals ..................................... 96

M. Fire Control ................................. 98

N. Sociological Impacts ......................... 98

O. Public Safety ................................ 99

P. Transportation ............................... 99

IV. MITIGATING MEASURES INCLUDED IN THE PROPOSED ACTION ........... 101

General Mitigating Measures ..................... 101

Specific Mitigating Measures .................... 101

A. Air Quality and Electronic Interference ...... 101

Section Page

B. Soil .................................................. 101

C. Vegetation .............................................. 103

D. Water ................................................... 103

E. Wildlife ................................................ 104

F. Fish .................................................... 104

G. Livestock ............................................... 104

H. Scenic and Esthetic Quality ............................. 105

I. Historical and Archaeological ........................... 105

J. Fire Control ............................................ 106

K. Public Safety ........................................... 106

V. ADVERSE EFFECTS WHICH CANNOT BE AVOIDED SHOULD THE PROPOSAL BE IMPLEMENTED ............................................ 109

A. Air Quality and Electronic Interference ................. 109

B. Geology and Topography .................................. 109

C. Soil and Vegetation ..................................... 109

D. Water ................................................... 109

E. Wildlife ................................................ 109

F. Livestock ............................................... 110

G. Scenic and Esthetic Quality ............................. 114

H. Historical and Archaeological ........................... 114

I. Sociological Impacts .................................... 114

VI. RELATIONSHIP BETWEEN LOCAL SHORT TERM USES OF MAN'S ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG TERM PRODUCTIVITY 115

VII. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES WHICH WOULD BE INVOLVED IN THE PROPOSED ACTION SHOULD IT BE IMPLEMENTED ............................................. 117

VIII. ALTERNATIVES TO THE PROPOSED ACTION ....................... 119

A. No Action Alternative ................................... 119

Section Page

B. Other Alternative Corridors .............................. 119

C. Proposed Warner Valley Power Plant ..................... 120

D. On-site Generation ..................................... 120

E. Alternative Transmission Line Designs .................. 121

1. Double Circuit Design .............................. 121
2. Steel Towers ....................................... 121
3. Underground Transmission ........................... 122
4. Alternative Construction Methods ................... 122

F. Alternative Line Sizes ................................. 123

G. Conservation of Energy ................................. 123

IX. CONSULTATION AND COORDINATION WITH OTHERS .................... 125

A. Consultation and Coordination for the Draft ............ 125

B. Consultation and Coordination for the Final Environmental Statement ................................................ 125

APPENDICES

## PART I. DESCRIPTION OF THE PROPOSAL

### A. Proposed Action

Utah Power and Light Company proposes to construct a 230 KV power transmission line between Sigurd and Cedar City, Utah. The transmission line would supply electrical power to communities in Southern Utah and tie into California Pacific Utilities power grid. Federal action involves granting a 100 foot wide right-of-way for one 230 KV power transmission line.

The action involves three general stages: survey, construction, and maintenance. The preconstruction phase is one of surveying the line. The construction stage would require use of heavy equipment in right-of-way clearing and in access road construction. Maintenance would vary from routine inspections to major repairs involving reconstruction, if required.

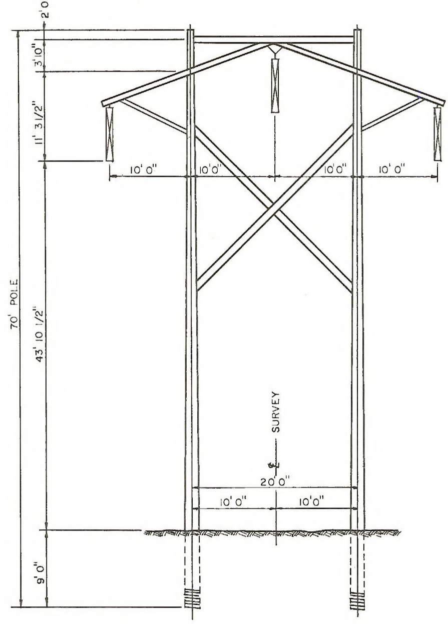
The line would be over 100 miles in length and the number of structures would vary from six to seven per mile, depending upon topography. Most of the structures would consist of two wood poles with cross arms and braces. Major tangent points (about 4%) would require three pole structures. Overall above-ground height of each structure would be approximately 70 feet. See the following illustrations for further details on pole structure.

### B. Corridor Alternatives

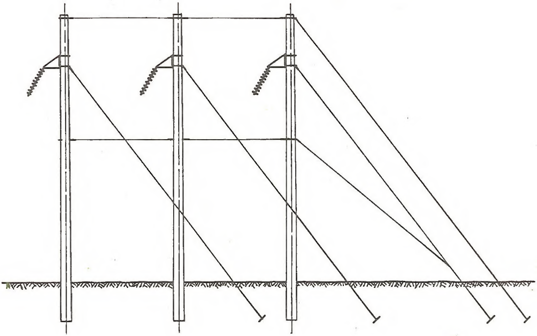
Consideration is given to four corridor possibilities for a specific 230 KV line. Each originates at Utah Power and Light's substation near Sigurd, Utah, and ends at Cedar City, Utah. Each identified corridor is at least two miles wide. If and when a specific corridor has been selected and surveyed, an on-the-ground environmental assessment would be made for individual structure sites and other construction areas. The criteria used in selection of the four alternatives were: 1) presence of existing transmission line and other cultural features so as to minimize disturbance of natural areas, and 2) topography conducive to ease of access and construction. The locations of all four corridors can be seen on maps on the following pages.

#### B.1. Sevier Valley Corridor

The corridor extends south through the Sevier Valley to Circleville, Utah. Near Circleville the corridor crosses a small portion of the Fishlake National Forest in Dog Valley through Buckskin Valley. The route then extends south roughly paralleling U.S. Highway 91 and the existing 138 KV line to Cedar City. Approximate length of this corridor is 112 miles.



CONVENTIONAL TWO-POLE STRUCTURE



CONVENTIONAL THREE-POLE STRUCTURE
WITH GUYING DIAGRAM

(Guying to be no less than 3/4 to 1 slope)

### B.2. Cove Fort Corridor

From the substation, the corridor extends south and west through Clear Creek Canyon to Cove Fort, then south to Beaver and Cedar City. This corridor would roughly parallel the existing 138 KV line from Sigurd to Cedar City. Approximate length of this corridor is 117 miles.

### B.3. Grass Valley Corridor

From the substation the corridor extends south through Grass Valley to Otter Creek Reservoir. The corridor continues south of Kingston Canyon to Circleville. At Circleville the corridor intercepts the Sevier Valley corridor and follows it to Cedar City. Approximate length of this corridor is 130 miles.

### B.4. West Desert Corridor

This corridor extends north from the substation to Scipio, then west paralleling an existing 230 KV line to Pavant. At Pavant the corridor turns south paralleling the Union Pacific railroad tracks to Cedar City. The approximate length of this corridor is 160 miles.

## C. Construction Time Frame

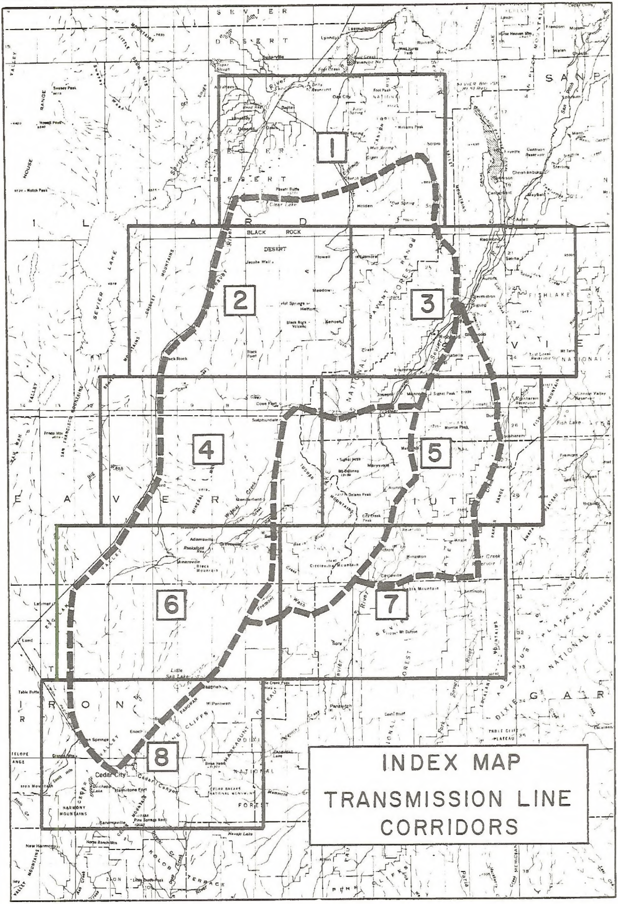
The estimated construction time frames for each corridor are as follows:

| Corridor | Construction time[1/] |
|---|---|
| Sevier Valley | 9 months |
| Cove Fort | 9-10 months |
| Grass Valley | 10-12 months |
| West Desert | 12-13 months |

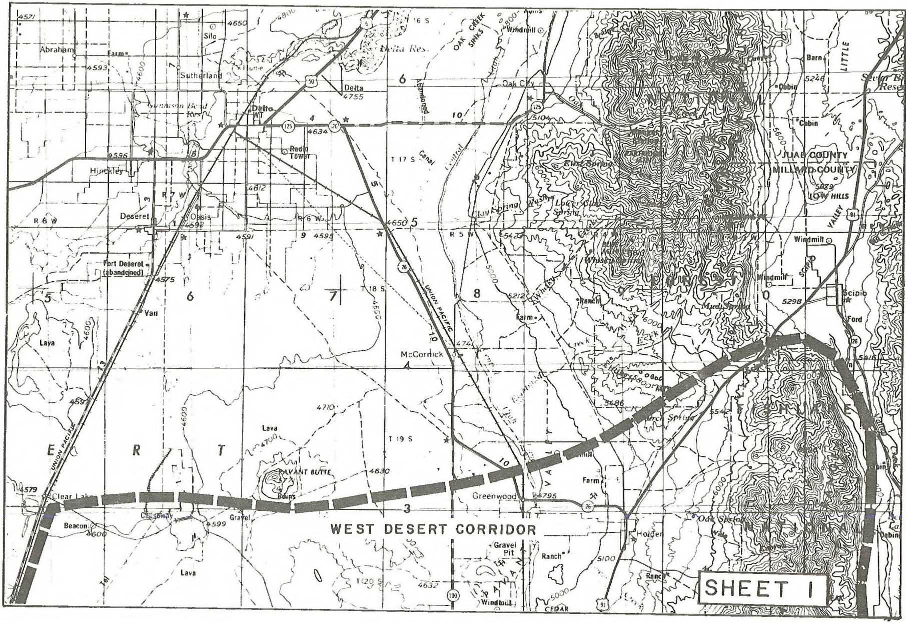
## D. Survey Activities

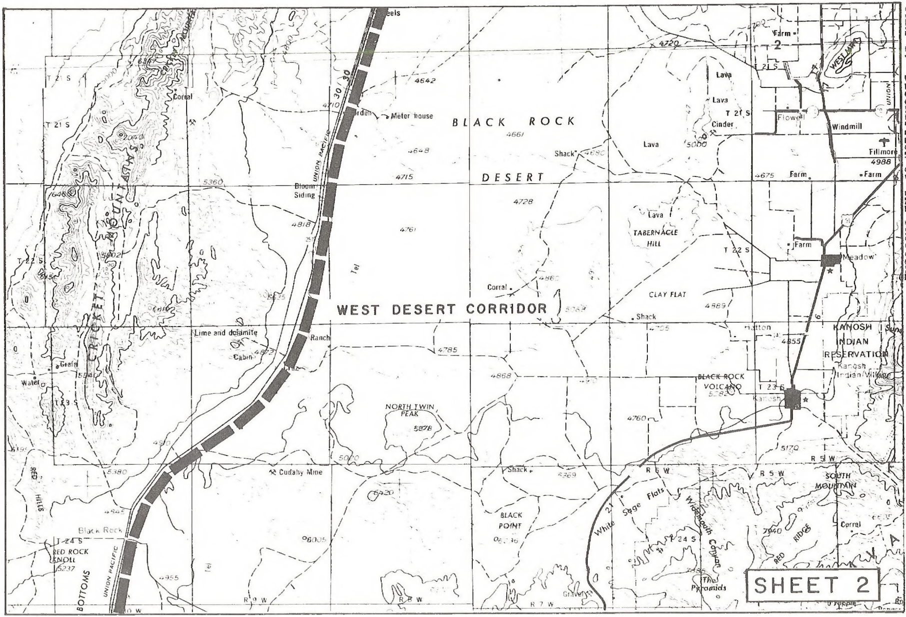
Surveying would be done in two parts, and would be the same in all corridors. The first stage of the survey would involve the use of telemeter or a microwave sender and receiver, which requires occupancy of only a few points along the line. This is followed by a more complete on-the-ground survey. Both stages could be completed with minimal surface disturbance.

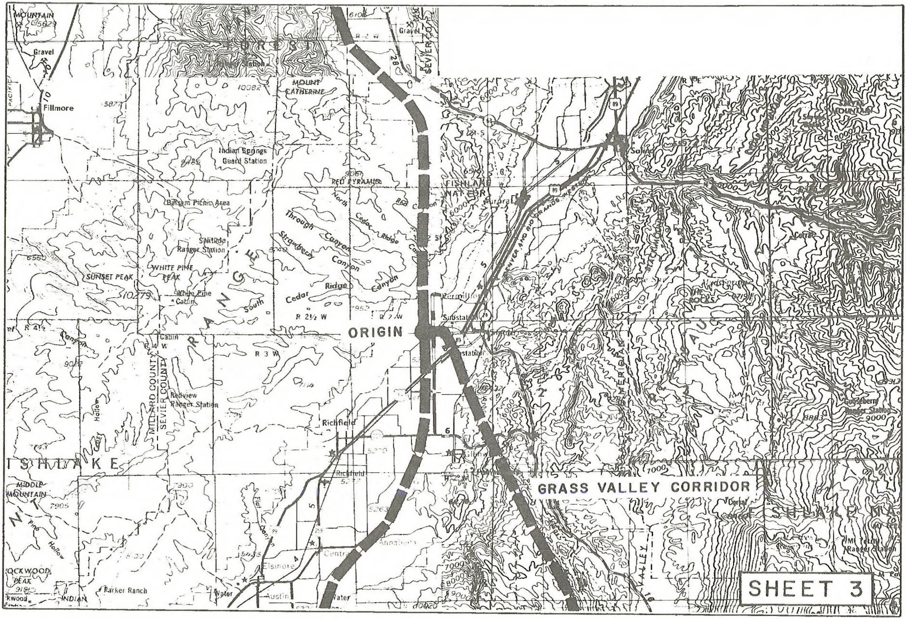
[1/] Construction time frames reflect a three-month winter season, but do not include any construction problems which may occur during the construction phase. Inclement weather, private easement acquisition, and special right-of-way requirements are examples of such problems.

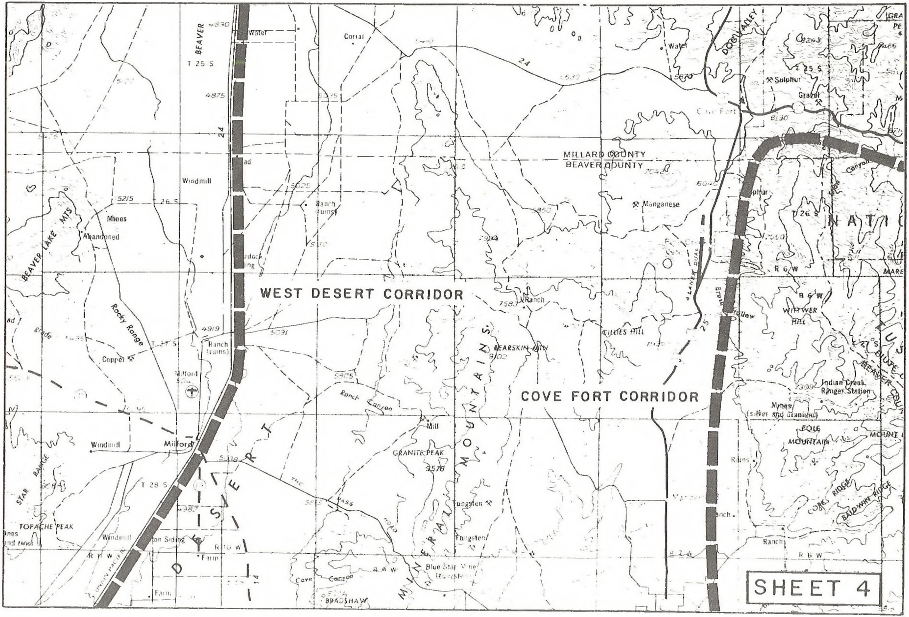


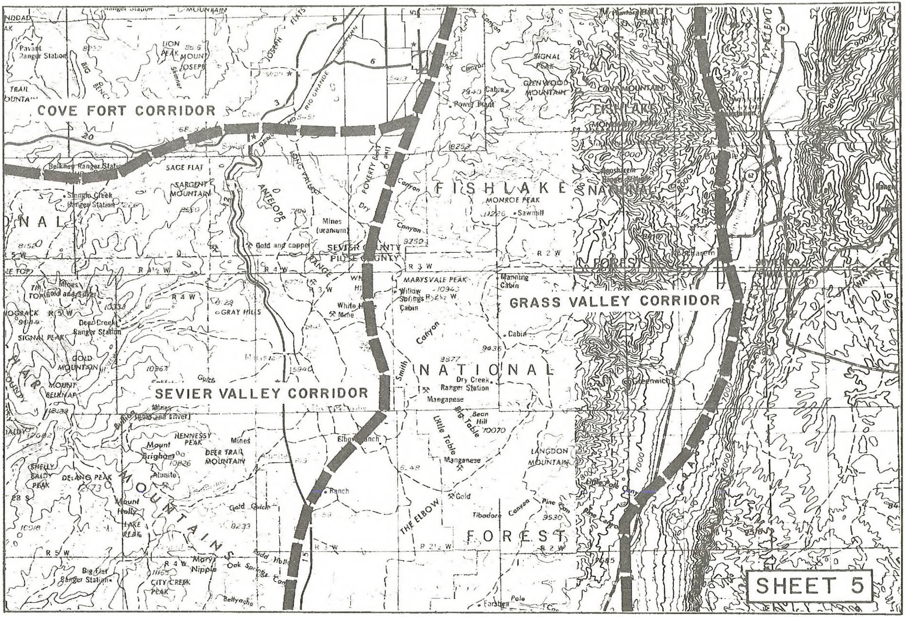
INDEX MAP
TRANSMISSION LINE
CORRIDORS

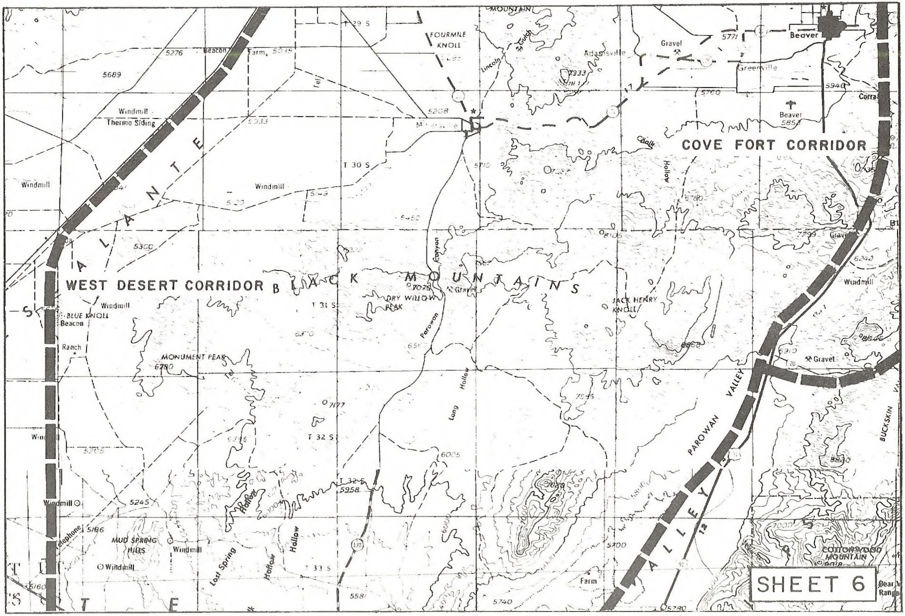

WEST DESERT CORRIDOR
SHEET 1
Delta
Hinckley
Abraham
Sutherland
Deseret
Oasis
Fort Deseret (abandoned)
Van
McCornick
Oak City
Greenwood
Holden
Scipio
Clear Lake
Beacon
Causeway
Pavant Butte
Lava
Juab County
Millard County
Low Hills
Union Pacific
Delta Res.
Oak Creek Sinks
Radio Tower
T 17 S
T 18 S
T 19 S
T 20 S
R 7 W
R 6 W
R 5 W
R 8 W

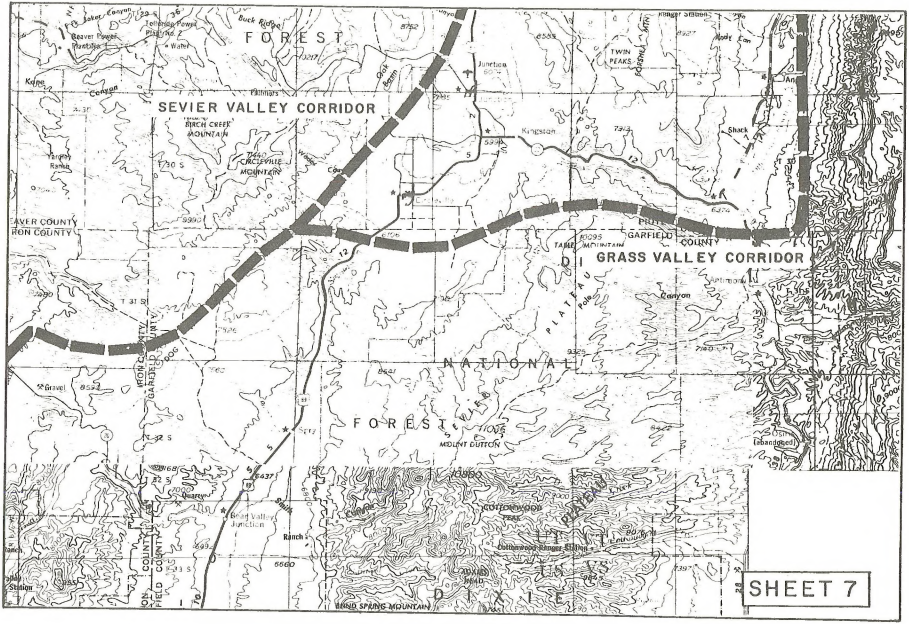

SHEET 2
WEST DESERT CORRIDOR
BLACK ROCK DESERT
CRICKET MOUNTAINS
UNION PACIFIC
30/30
Bloom Siding
Meter house
Lime and dolomite
Cabin
Ranch
Cudahy Mine
NORTH TWIN PEAK
5878
BLACK POINT
Black Rock
RED ROCK KNOLL
5237
BOTTOMS
RED HILLS
Water
Corral
Shack
Lava
Cinder
TABERNACLE HILL
CLAY FLAT
BLACK ROCK VOLCANO
5282
Hatton
Flowell
Windmill
Fillmore
4988
Farm
Meadow
KANOSH INDIAN RESERVATION
Kanosh Indian Village
Kanosh
White Sage Flats
Wide mouth Canyon
The Pyramids
SOUTH MOUNTAIN
RED RIDGE
7940
WEST MTN
T 21 S
T 22 S
T 23 S
T 24 S
R 5 W
R 6 W
R 7 W
R 8 W
R 9 W
4642
4648
4661
4715
4728
4761
4818
4785
4868
4760
4855
4889
4675
4720
5360
5380
6420
5000
5170
4955
4845
Gravel
Tel
21
6

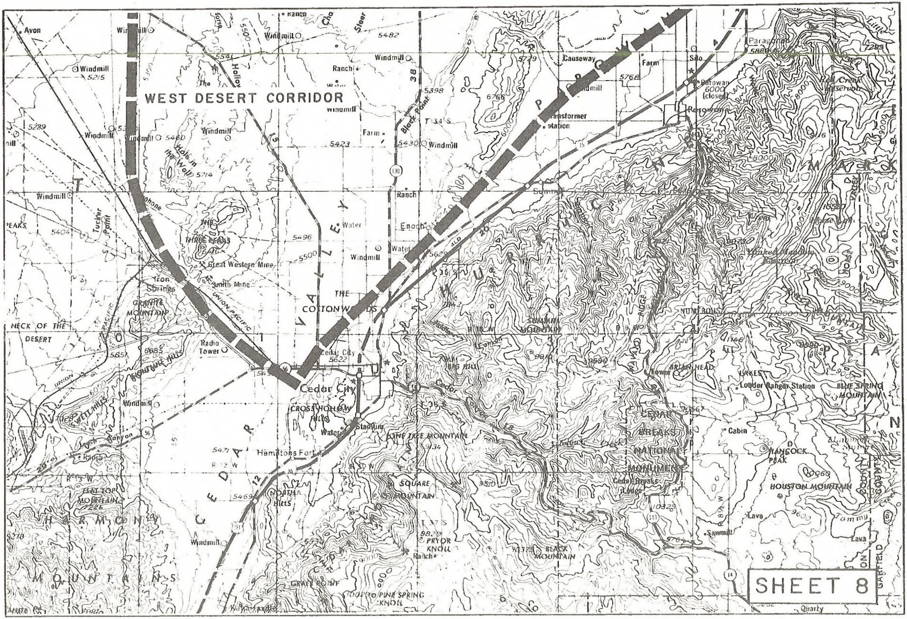

ORIGIN
GRASS VALLEY CORRIDOR
SHEET 3
Fillmore
Richfield
Salina
Aurora
Sigurd
Glenwood
Elsinore
Austin
Annabella
Central
MOUNT CATHERINE
RED PYRAMID
Indian Springs Guard Station
Balsam Picnic Area
Solitude Ranger Station
WHITE PINE PEAK
SUNSET PEAK
Redview Ranger Station
MILLARD COUNTY
SEVIER COUNTY
Through Canyon
Strawberry Canyon
Cedar Ridge
North Cedar Ridge
Red Canyon
Flat Canyon
Cozy Hollow
Pine Hollow
MIDDLE MOUNTAIN
LOCKWOOD PEAK
Parker Ranch
FISHLAKE NAT FOR
R 4½ W
R 4 W
R 3 W
R 2½ W
R 2 W
Substation
Gooseberry Ranger Station
THE ROCKS
Mt Terrel Ranger Station


WEST DESERT CORRIDOR
COVE FORT CORRIDOR
SHEET 4
MILLARD COUNTY
BEAVER COUNTY
BEAVER
Milford
Cove Fort
BEAVER LAKE MTS
Rocky Range
MINERAL MOUNTAINS
DESERT
GRANITE PEAK
9578
BEARSKIN MTN
9102
GILLIES HILL
WITTWER HILL
POLE MOUNTAIN
Indian Creek Ranger Station
Mines (silver and uranium)
COOKS RIDGE
BALDWIN RIDGE
STAR RANGE
TOPACHE PEAK
BRADSHAW
Blue Star Mine (Tungsten)
Tungsten
Manganese
Sulphur
Gravel
Copper
Mines Abandoned
Windmill
Ranch
Ranch (ruins)
Farm
Water
Corral
Mill
T 25 S
T 26 S
T 27 S
T 28 S
R 6 W
R 7 W
R 10 W
24
25
14
DOG VALLEY
4 LANES DUAL
Brush Hollow
Ranch Canyon
Cove Canyon
THE PASS ROAD
UNION PACIFIC
FISHLAKE NATIONAL FOREST
PIUTE COUNTY
BEAVER COUNTY


COVE FORT CORRIDOR
SEVIER VALLEY CORRIDOR
GRASS VALLEY CORRIDOR
SHEET 5
FISHLAKE NATIONAL FOREST
FISHLAKE NATIONAL FOREST
SEVIER COUNTY
PIUTE COUNTY
TUSHAR MOUNTAINS
Pavant Ranger Station
LION PEAK
MOUNT JOSEPH
Belknap Ranger Station
SAGE FLAT
SARGENT MOUNTAIN
Monroe
Power Plant
SIGNAL PEAK
GLENWOOD MOUNTAIN
COVE MOUNTAIN
MONROE PEAK
Sawmill
Mines (uranium)
Gold and copper
MARYSVALE PEAK
Willow Springs Cabin
Manning Cabin
White Hills Mine
GRAY HILLS
Deer Creek Ranger Station
SIGNAL PEAK
GOLD MOUNTAIN
MOUNT BELKNAP
Mines (gold and silver)
HENNESSY PEAK
Mount Brigham
DEER TRAIL MOUNTAIN
Alunite
DELANO PEAK
Mount Holly
LAKE PEAK
Dry Creek Ranger Station
Manganese
Bean Hill
Big Table
Little Table
LANGDON MOUNTAIN
Elbow Ranch
Ranch
Gold Gulch
THE ELBOW
Gold
Tibadore Canyon
Pine Canyon
Koosharem
Greenwich
Big Flat Ranger Station
CITY CREEK PEAK
Marys Nipple
Oak Springs Canyon
Bellyache
Poverty Flat
Dry Canyon
Smith Canyon
R 5 W
R 4 W
R 3 W
R 2½ W
R 2 W
15
24
62
6
3
10000
9000
8000
7000


WEST DESERT CORRIDOR
COVE FORT CORRIDOR
SHEET 6
BLACK MOUNTAINS
ESCALANTE
PAROWAN VALLEY
Beaver
Greenville
Adamsville
FOURMILE KNOLL
Thermo Siding
Windmill
BLUE KNOLL
Beacon
Ranch
MONUMENT PEAK
DRY WILLOW PEAK
JACK HENRY KNOLL
MUD SPRING HILLS
COTTONWOOD MOUNTAIN
BUCKSKIN
Parowan Canyon
Long Hollow
Lost Spring
Gravel
Farm
T 29 S
T 30 S
T 31 S
T 32 S
T 33 S


SEVIER VALLEY CORRIDOR
GRASS VALLEY CORRIDOR
SHEET 7
FOREST
NATIONAL
FOREST
DIXIE
Junction
Kingston
Circleville
BIRCH CREEK MOUNTAIN
CIRCLEVILLE MOUNTAIN
TWIN PEAKS
Beaver Power Plant No. 1
Telluride Power Plant No. 2
Buck Ridge
Kane Canyon
Yardley Ranch
BEAVER COUNTY
IRON COUNTY
GARFIELD COUNTY
PIUTE
TABLE MOUNTAIN
SEVIER PLATEAU
Antimony
Canyon
MOUNT DUTTON
Osiris (abandoned)
Gravel
Quarry
Bear Valley Junction
Ranch
Spry
COTTONWOOD PEAK
Cottonwood Ranger Station
ADAMS HEAD
BLIND SPRING MOUNTAIN
T 30 S
T 31 S
T 32 S
T 33 S
Shack
Ranger Station


WEST DESERT CORRIDOR
SHEET 8
Avon
Windmill
Ranch
5482
5215
38
5398
Black Point
T 34 S
Causeway
Farm
Silo
5768
5729
6766
Transformer station
Parowan
6000 (closed)
Paragonah
Red Creek Reservoir
Hole in the Wall
5714
5460
5423
5430
5229
Farm
15
130
Summit
Tucker Point
5404
PEAKS
THE THREE PEAKS
5496
5500
Water
Enoch
Great Western Mine
Smith Mine
Iron Springs
GRANITE MOUNTAIN
UNION PACIFIC
THE COTTONWOODS
NECK OF THE DESERT
Radio Tower
Cedar City
5622
56
CROSS HOLLOW HILLS
Stadium
LONE TREE MOUNTAIN
Hamiltons Fort
5471
R 12 W
R 13 W
FLAT TOP MOUNTAIN
H A R M O N Y
M O U N T A I N S
C E D A R
V A L L E Y
12
NORTH HILLS
5469
SQUARE MOUNTAIN
T 37 S
PRYOR KNOLL
BLACK MOUNTAIN
PINE SPRING KNOLL
GRAPE POINT
Kanarraville
T 35 S
SUMMIT MOUNTAIN
BIG HILL
R 9 W
BRIAN HEAD
LAKES
Louder Ranger Station
BLUE SPRING MOUNTAIN
CEDAR BREAKS NATIONAL MONUMENT
Cedar Breaks Lodge
10325
143
Cabin
HANCOCK PEAK
HOUSTON MOUNTAIN
Lava
Sawmill
14
Tommy Creek
GARFIELD
Quarry
Yankee Meadow Reservoir
NUMBROUS
10580
M A R K
P L A T E A U
Windmill
Ranch

## E. Construction Activities

Proposed transmission line structures would be mainly two upright wood poles with cross arms and braces. A lesser number of three-pole structures (490) with supporting guy wires would be required at major tangent points in the line. The average span of each structure would be about 840 feet. Each pole is approximately 80 feet in overall length (70 feet high with 9 feet below ground). The following table shows approximate number of pole structures which would be required for each route:

| Corridor Name | Total length in miles | No. Poles Required | No. of Structures Required |
|---|---|---|---|
| Sevier Valley | 112 | 1,425 | 668 |
| Cove Fort | 117 | 1,500 | 735 |
| Grass Valley | 130 | 1,665 | 817 |
| West Desert | 160 | 2,050 | 1,006 |

The poles, cross arms and braces would be medium to light brown in color; non-specular conductors would not be used in this proposed project.

Staging areas would be located on private land near rail heads at the initial and terminal ends of the project. Storage locations are on existing private sites.

Normal sequence of conventional transmission line construction and general types of equipment required are listed as follows:

### 1. Installing Gates and Bridges

This operation requires a pick-up truck and a flat bed truck plus occasional use of a backhoe or crawler tractor. The number of gates and bridges required cannot be determined at this time; however, it is known that most of this operation would be on private land.

2. Access - including road construction to the structure sites and general access along the transmission line route in those areas where access roads are presently nonexistent. Several existing access roads could be used. New access road construction would require clearing of vegetation. Basic equipment required is a crawler tractor with blade. Number of miles of new road construction cannot be determined at this time; however, it is known that miles required would be considerably less than total length of the line.

### 3. Excavation and Digging

Operation consists of clearing each structure site and digging pole and anchor holes. Equipment required would consist of one track-mounted hole drilling rig, one backhoe and one track-mounted drill rig for blasting in rocky areas when necessary. This operation would be required at each structure site.

### 4. Hauling

Operation consists of hauling poles, cross arms, braces, insulators and associated hardware to each structure site. Equipment required is one diesel truck with attached pole trailer, one diesel truck with flat bed trailer and one truck-mounted crane.

### 5. Framing

Operation consists of structure assembly on site. Required equipment includes one flat bed truck, one truck-mounted crane and one truck for transporting the workers.

### 6. Erection

Operation includes actual erection and placing of each assembled structure plus leveling, squaring, backfilling and placing anchors. Required equipment includes one special lifting crane attached to a crawler tractor, one truck-mounted crane, one compressor truck and one flat bed truck.

### 7. Stringing

Operation includes laying out steel pulling lines and stringing conductors (lines) through the insulators on each structure. Three conductors are installed on each structure. Equipment required would include one crawler tractor, one or two puller trucks, one tensioner tractor-trailer mounted and one wire reel stand-trailer mounted.

### 8. Sagging

Operation splices conductors and pulls each one to the proper tension. Equipment used is one crawler tractor, two puller trucks, one tensioner tractor-trailer mounted and one wire reel stand-trailer mounted.

## 9. Clipping

Operation attaches conductors to the insulators which are supported by the structure. Equipment consists of one high-reach crane with working cage mounted on a truck and one pickup truck.

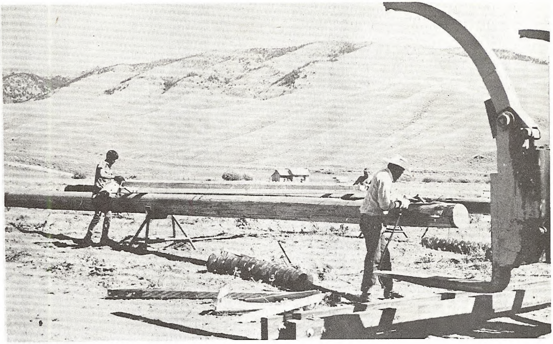


Illustration 1. Typical framing operation. Each structure is fully assembled on the ground.

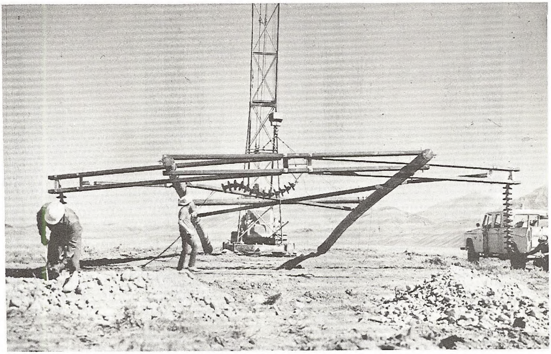


Illustration 2. Typical erection operation. Each structure is hoisted into the final position.

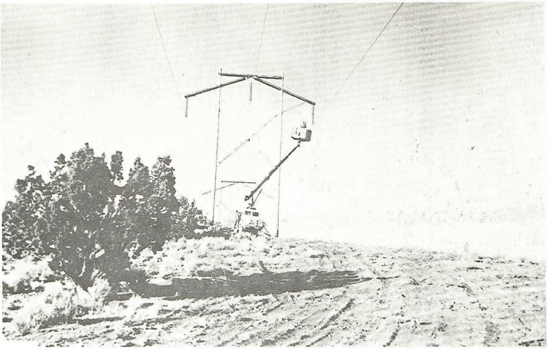


Illustration 3. Typical structure in place. Conductor is being secured to the insulator.

Illustration 4. Typical hole digger mounted on a crawler-type tractor.

### 10. Clean-up and Restoration

Operation includes overall dressing up and restoration of the total project, including access roads, fences, structure sites, etc. Equipment required includes one crawler tractor and blade, one flat bed truck and one pickup truck.

### 11. Reseeding

Operation involves planting of certain browse, grass and forb species on disturbed surface areas. Equipment used is one farm tractor and one seeding drill.

## F. Line Maintenance

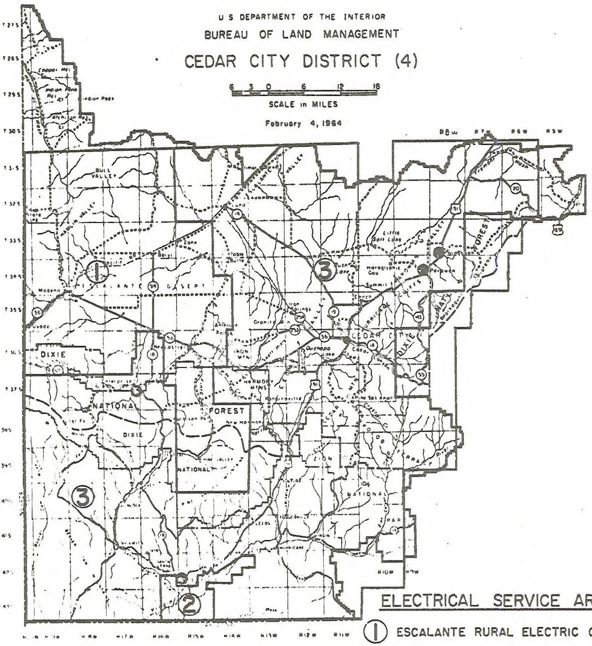
The Utah Power and Light maintenance program would involve patrolling the line every month by fixed-wing aircraft, every six months by helicopter, and every twelve months by foot patrol. California-Pacific would also be charged with maintaining that portion of the line located in its service area. Their maintenance program would consist of patrolling the line twice a year on foot and motorcycle. These patrols would occur in the late fall after hunting season and late spring after winter storms. The maintenance program would be the same for all corridors.

Line maintenance would vary from routine inspections to emergency repairs necessary to restore line service. Thus, the actions associated with maintenance operations could be minimal or as significant as those described in the previous section.

## G. Interrelationships with Other Projects

Southwestern Utah's electrical energy demands are satisfied by California-Pacific and the Bureau of Reclamation through a portion of Utah Power and Light's system. (See map on following page). The existing system consists of a 138 KV line, built in 1960, from Utah Power and Light's substation at Sigurd, Utah, to Cedar City, Utah, and another 138 KV line from Cedar City to St. George, Utah. St. George is also intertied with Cedar City by a 69 KV line.

The electrical power needs between Cove Fort, Utah, and the Beaver County line are supplied by Utah Power and Light from this 138 KV system. The primary communities serviced in this area are Beaver, Minersville, and Milford. The rural areas of Beaver County also receive their electrical energy from this system. When the existing line enters Iron County, it becomes the property of the California-Pacific Utilities Company.



U S DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
CEDAR CITY DISTRICT (4)

SCALE in MILES

February 4, 1964

## ELECTRICAL SERVICE AREAS

① ESCALANTE RURAL ELECTRIC CO-OP

② DIXIE RURAL ELECTRIC CO-OP

③ CALIFORNIA-PACIFIC UTILITIES COMPANY

● MUNICIPAL SYSTEMS

## PART I. DESCRIPTION OF THE PROPOSAL

Both California-Pacific and indirectly, Utah Power and Light, are intertied with the other electric utilities in southwestern Utah. Both companies transmit Colorado River storage power under contract with Bureau of Reclamation to various municipal and cooperative associations throughout southwestern Utah. The cooperative and municipal systems supplied by the 138 KV system include the cities of Parowan, Paragonah, Enterprise, and St. George. Dixie Rural and Escalante Valley Electric Associations are also supplied over the existing system.

The capacity of California-Pacific's electric transmission facilities in Iron and Washington Counties is 65 megawatts. These facilities consist of the previously-mentioned 138 KV transmission line with a capacity of 52 megawatts and generation facilities (steam, hydroelectric, and diesel) with a capacity of 13 megawatts. The loads supplied by these facilities totaled 54.4 megawatts in July 1973. About 60 percent, 32.6 megawatts, was delivered to California-Pacific's customers, and 40 percent or 21.8 megawatts of the load was transmitted to the municipal and cooperative systems. Shunt capacitors were installed on the 138 KV line during the first half of 1973 to help increase the load carrying capacity of the existing system. They will not be sufficient to provide enough electricity through 1975. The involved power companies estimate a peak load of 66.4 megawatts by 1975. If this load should develop, it will exceed the capacity of the present system by 1.4 megawatts. All available evidence indicates that additional electrical energy and transmission facilities will be required by 1975. California-Pacific's planning estimates indicate their loads will increase to 253 megawatts by the summer of 2000. Of this amount, 164 megawatts will be needed by California-Pacific's customers. An additional 89 megawatts is the estimated load for municipal and cooperative systems in southwestern Utah, over and above the load transmitted by California-Pacific under contract with the Bureau of Reclamation.

With the increasing costs of fossil fuels, some power companies are experiencing an increasing demand for electricity as consumers convert to electric water and space heating. In southern Utah, the lack of natural gas supports the hypothesis that electric usage will increase despite conservation efforts by both power companies and consumers.

The additional load of 89 megawatts for the municipal and cooperative systems may be understated. St. George, the largest municipal system in southwestern Utah, expects to be producing its own power at some future date. The city of St. George and Nevada Power Company are proposing a thermal electric generating plant in the St. George area (Warner Valley site). St. George will purchase its total supply of power from the Bureau of Reclamation until 1977, and has negotiated a contract with Utah Power and Light to purchase additional power requirements beyond 1977 for an indefinite period of time. Such purchased power would be transmitted over Utah Power and California-Pacific's lines. Until the Warner Valley plant becomes a reality and the cost of power from that source is competitive, the city of St. George would continue to purchase additional power from Utah Power and Light. This arrangement suggests that the 230 KV line may not be large enough to handle St. George's load requirements until the year 2000 if the proposed Warner Valley plant is not constructed.

### H. Other Environmental Statements

A draft environmental statement has been prepared on the Second Unit Huntington Canyon Generating Station and 345 KV Transmission Line. This statement was prepared by the Bureau of Reclamation (lead agency), the Bureau of Land Management and the Forest Service. This statement covered, as far as possible, the effects of construction, operation, and maintenance of the second 430 MW (megawatts) Huntington unit and the construction, maintenance, and operation of power transmission lines from the Huntington plant to the Sigurd substation.

If one of the alternative corridors for the Sigurd to Cedar City line is selected and a line constructed, it is possible that another line could be placed within it at some future date. Since there are no specific proposals for this, the impact of another line within the corridors is not considered in this statement.

All known proposed transmission line projects in Utah associated with ongoing and upcoming Environmental Impact Statements on the Garfield, Emery, Intermountain, Kaiparowits, and Allen-Warner Valley Energy Systems have been reviewed for any possible relationship or conflict with the Sigurd to Cedar City transmission line.

There is no apparent relationship or conflict, since all of these projects are several years in the future (if they are built), while additional power is needed in Cedar City by June 1975.

The Bureau of Land Management is currently accomplishing a study on known proposed transmission lines transporting power from Utah to Nevada and California. The study will identify major transmission corridors from proposed power generation plants to Nevada and California, but it will not be completed in time to affect the possible selection of a corridor discussed in this statement.

# PART II. DESCRIPTION OF THE ENVIRONMENT

## A. Sevier Valley Corridor

### A.1. Introduction

This corridor extends south through the east side of Sevier Valley from the Sigurd substation to Poverty Flat southwest of Monroe, then south passing east of Marysvale to Circleville. At Circleville the corridor extends southwest through Dog Valley and Buckskin Valley to U. S. Highway 91. The corridor then extends south through Parowan and Cedar Valley to Cedar City. (See map on next page). Maps relating to all four corridors are found at the end of Part II.

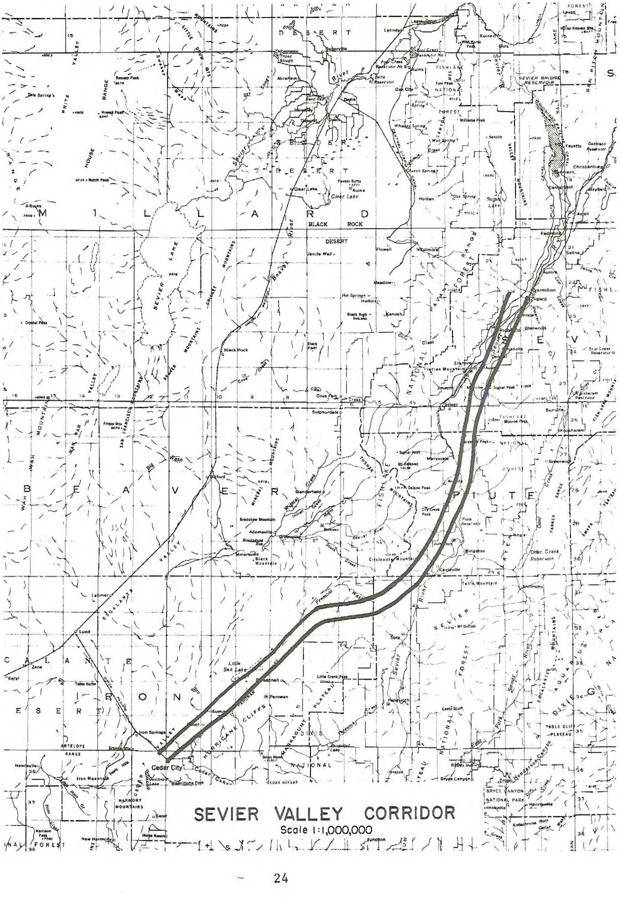
A powerline constructed through this corridor would be approximately 112 miles long. About 42 percent of the length of the line, or 47 miles, would cross national resource land, and 44 percent of the line, or 49 miles, would cross private and state-owned land. Approximately 14 percent of the line or 16 miles would cross Fishlake National Forest.

There are 18 towns or settlements located within or close to the corridor. There are approximately 9,000 people living in these communities, excluding Cedar City's 1970 population of 8,946 people. The larger communities of Richfield, Monroe, and Parowan account for about 7,000 of the 9,000 total for all communities. Most of the communities along the corridor except Richfield and Cedar City have shown population declines during the last 10-year census period. In addition, there are several ranch and farm houses scattered throughout the corridor. The largest concentrations of these dwellings are found along the northern and southern portions of the corridor near Parowan, Cedar City, and Richfield where the predominant land use is agricultural.

Almost the entire length of the corridor is devoid of large transmission lines, but there are several smaller distribution lines scattered throughout the corridor. Beginning at the junction of U. S. Highway 91 and Highway 20, the corridor intercepts the existing 138 KV line, and it follows this line to Cedar Valley. The portion of the corridor extending through Dog Valley and Buckskin Valley is undisturbed by transmission lines.

### A.2. Air Quality and Electronic Interference

Air quality throughout the Sevier Valley to Cedar City is generally very good and exceeds federal and state minimum standards. There are some localized dust problems from farming operations and the use of unsurfaced roads. Normally the prevailing wind is from the southwest. The Sigurd gypsum mills adversely affect air quality in the extreme northern portion of the corridor by emitting a white gypsum dust into the atmosphere during all hours of operation.



SEVIER VALLEY CORRIDOR
Scale 1:1,000,000

No communication sites are located within this corridor; however, there are five such sites located within three to five miles of the corridor. Electronic interference to car radio reception is severe around the Sigurd substation.

### A.3. Geology and Topography

From Sigurd south to Poverty Flat, the proposed route generally follows the east side of the valley bottom. This area is characterized by a relatively flat topography which results in a low potential for soil erosion. The deposits in this portion are alluvium (sedimentary matter left by flowing waters) for the most part, with some colluvium (sedimentary matter left by wind and water) on the benches south of Monroe. Although this portion of the corridor does not contain any mapped geologic faults, it is located within the Sevier-Tushar Fault Zone, one of the most active fault zones in Utah with 50 earthquakes recorded between 1850 and 1970. Three of these, one near Richfield and two near Elsinore, were particularly severe with a magnitude greater than 6 on the Richter Scale.

From Poverty Flats continuing south, the route crosses over a group of low mountains and hills comprising the Antelope Range. These hills are composed primarily of extensively-faulted volcanic material which results in a fairly steep and rough terrain. Southeast of Thompsonville, to Circleville the route crosses the Sevier River Valley and continues along the Valley west of Piute Reservoir. Alluvial deposits with some colluvial deposits predominate in this area, and the terrain is relatively flat. This portion of the corridor crosses several small faults and parallels, sometimes crossing, the major north-south fault system along the west side of the valley. The only exception to the relatively flat alluvial-colluvial deposits is a small mountain west of Junction, which is fairly steep and composed primarily of volcanic rock of the Roger Park formation.

From Circleville to U. S. Highway 91, the terrain consists of alternating areas of rugged hills and small, high valleys. This area is underlain by the Roger Park formation that could possibly provide a fairly high potential for erosion in areas of high relief. The remainder of the corridor extends through Parowan Valley and Cedar Valley. The valley deposits are almost exclusively alluvial, and are fairly flat. Valleys are underlain by numerous, more-or-less parallel, northeast trending faults.

### A.4. Climate

The elevation varies along this route from about 5,000 feet near Richfield to over 8,000 feet near Buckskin Valley. Climatic conditions and precipitation differ with elevation. Annual precipitation at Richfield is approximately 8 inches, and the Circleville area receives about 9 inches annually. The Cedar City area receives slightly more precipitation at about 10 inches per year. Higher elevations along the route receive 16 or more inches of precipitation annually. Above 6,000 feet most of the precipitation falls during the winter and early spring months in the form of snow. Below 6,000 feet about equal amounts of precipitation fall as snow and rain. A combination of snow and rain can be expected during the spring and fall months. Moisture during the summer months is in the form of rain. Localized high intensity thunderstorms are common periodically during the summer.

Temperatures also vary with elevation. The frost-free season around Richfield normally is 129 days. Around Cedar City the frost-free season is 142 days long.

### A.5. Soil

There are nine different soil types within this corridor. Generally those soils in Sevier, Cedar and Parowan Valleys are used for agriculture while those in the foothills and mountains produce forage for livestock and food and cover for wildlife.

The following table indicates the soil types through which the corridor passes, acreage that would be disturbed by construction, percent of each soil type in the corridor, and the erosion hazard of the soil. The erosion hazard does not indicate the present erosion condition, but indicates properties of the soil that reflect erosion and recovery potential. This potential is based on some physical properties of the soil, depth of the soil and total precipitation.

| SOIL TYPE 1/ | MILES | ACRES DISTURBED 2/ | % CORRIDOR | EROSION | RECOVERY |
|---|---|---|---|---|---|
| 54 | 44 | 176 | 41 | Mod to Low | 50% - 70% |
| 34 | 3 | 12 | 3 | Mod to Low | 70% |
| 23 | 16 | 64 | 15 | Mod | 70% |
| 55 | 11 | 44 | 10 | Mod to Low | 50% - 70% |
| 33 | 7 | 28 | 6 | Mod to Low | 30% - 70% |
| 1 | 12 | 48 | 11 | Low | 70% |
| 32 | 2 | 8 | 2 | Mod to Low | 70% |
| 68 | 9 | 36 | 8 | Mod | 30% |
| 56 | 4 | 16 | 4 | Mod to High | 30% - 50% |
|  | 112 | 432 | 100 |  |  |

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1/ Refer to Appendix A for specific soil descriptions.

2/ Affected acreage was calculated using four acres disturbance per line.

### A.6. Vegetation

The corridor extends through six major vegetative types including irrigated cropland, pinyon-juniper, big sagebrush, mountain brush, and a small amount of coniferous forest and grassland. The vegetative types, excluding cropland are not pure stands, but occur with a variety of brush, grass and forbs that make up a plant community. The big sagebrush type occupies most of the low foothill areas and the low mountain plateaus. The pinyon-juniper type occupies the steeper slopes and canyons while the mountain shrub type is found at higher elevations and generally above the pinyon-juniper type.

This corridor crosses the following vegetative types:

| Vegetative Type | Miles of Corridor | Percent | Affected Acreage[1/] |
|---|---|---|---|
| Cropland | 30 | 26 | 120 |
| Pinyon-juniper | 30 | 26 | 120 |
| Sagebrush | 39 | 35 | 156 |
| Mountain brush | 10 | 10 | 40 |
| Conifers | 1 | 1 | 4 |
| Grassland | 2 | 2 | 8 |
|  | 112 | 100 | 448 |

### A.7. Water

The corridor roughly follows the Sevier River to the Circleville area where it crosses the low mountain pass into Parowan and Cedar Valleys.

Within this corridor the Sevier River is the largest, most important source of irrigation water for the areas of Circleville, Junction, Marysvale, and the Sevier Valley. The corridor also crosses Ten Mile Creek, City Creek, Wades Canyon, Cottonwood Creek, Birch Creek and Pine Creek. All these streams feed into the Sevier River and contribute to the total irrigation water supply. The corridor also passes close to Piute Reservoir, an irrigation storage project and recreation area.

The towns of Circleville and Junction both have municipal culinary water systems originating adjacent to the corridor in Cottonwood and City Creeks, respectively. There is also a developed culinary water system in City Creek for a campground.

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[1/] Estimated using four acres of vegetative disturbance per line mile.

## PART II. DESCRIPTION OF THE ENVIRONMENT

| Water Resource | Discharge | Sediment |
|---|---|---|
| Sevier River (Circleville) | 145 cubic feet/second (28 yr. avg.) | No record |
| Ten Mile Creek [1/] | No record | No record |
| City Creek [1/] | No record | No record |
| Wade Canyon[1/] | No record | No record |
| Cottonwood Creek [1/] | No record | No record |
| Birch Creek [1/] | No record | No record |
| Pine Creek [1/] | No record | No record |
| Piute Reservoir | Storage 71,000 acre feet | |

All streams flow in a relatively straight course and gradients are steep. Although sediment records are not available, all of the streams are known to carry sediment loads during high runoff and flood periods. This sediment comes from throughout the watershed and is a result of natural erosive processes in an arid climate rather than some man-made problem. The Monroe small watershed project is located within the corridor immediately east of Monroe. It is designed for flood control on washes adjacent to cultivated areas. There is no significant mineral or sewage pollution of any of the subject streams.

### A.8. Wildlife

The mule deer is the most abundant and economically important big game species in central and southern Utah. The deer spend their summers at the higher elevations of the mountain ranges then move to the foothills during the winter. This corridor passes over 63 miles of deer winter range mainly in the foothills of the Monroe and Tushar Mountains. Forty miles of the winter range are considered critical which is defined as that winter range heavily utilized and needed by deer for survival, especially during periods of heavy snow cover.

Low density chukar populations also occupy the rocky, cheatgrass covered foothills especially around Manning Creek and from Glenwood to Monroe.

Extensive areas of good quality sage grouse habitat occur in Dog Valley and Buckskin Valley. One known strutting ground in Buckskin Valley is located within the corridor.

Higher elevations extending from north of Dog Valley to Buckskin Valley are populated with deer during the summer. Blue grouse inhabit the area yearlong.

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[1/] Tributaries of the Sevier River. Discharge and sediment records are not maintained on these streams because of their minor importance.

The corridor traverses 32 miles of pheasant habitat. Sevier Valley is considered high quality pheasant habitat. Moderate to low quality pheasant habitat is found in Parowan and Cedar Valleys.

One small colony of California quail exists north of Monroe in the brushlands adjacent to the agricultural fields.

A small scattered herd of antelope range in the Buckhorn Flat area north of Parowan Valley.

The threatened Utah prairie dog occupies two colonies on agricultural land in Cedar Valley near Enoch and southwest of Summit. These sites are within the corridor.

All of the valleys and lower elevations are wintering grounds for a large raptor population. Bald eagles concentrate around Piute Reservoir and in the Buckhorn Flat area. Golden eagles and roughlegged hawks are well distributed throughout the corridor. Ferruginous hawks, marsh hawks and owls are fairly abundant. Some prairie falcon and an occasional peregrine falcon winter in Parowan and Cedar Valleys. Scattered raptor nesting locations probably occur throughout the corridor, but a particular concentration area is noted on the ledges north of Enoch.

Wetlands consist of the marshes, sloughs, ponds and wet meadows in the Glenwood Bottoms and Heppler Pond (Three Lakes) area of Sevier Valley. Also, the meandering Sevier River has wet meadows and sloughs associated with it. The river is especially valuable during the winter for wintering waterfowl when other waters freeze. Also, the cover along the bank provides 80 percent of the winter cover for pheasants in this agricultural valley.

The Glenwood Bottoms and Heppler Pond (Three Lakes) area support a large variety of nesting waterfowl, shorebirds, wading birds, and other wetland associated species. Also valuable are the large trees serving as nests for wading birds and raptors.

The entire corridor serves as habitat for a variety of common nongame birds, mammals, reptiles and amphibians.

### A.9. Fish

The corridor crosses five streams and the Sevier River twice. All of these streams support populations of dace, shiners and suckers. Some natural reproducing cutthroat trout populations occur in City and Ten Mile Creeks, and it is possible that remnant populations of the unique

Utah cutthroat trout may exist in the headwaters of the streams crossed. The streams listed below are stocked by the Utah Division of Wildlife Resources and support a sport fishery.

Fish Stocking of Streams Crossing Sevier Valley Corridor:

| Streams | No. Stocked/Yr. | Species | Type |
|---|---|---|---|
| Sevier River (above Big Rock Candy Mtn.) | 2,000 | Rainbow Trout | Catchable |
| | 10,000 | Brown Trout | Fingerling |
| Ten Mile Creek | Unknown | Cutthroat Trout | Fry |
| City Creek | 500 | Rainbow Trout | Catchable |
| | Unknown | Brook Trout | Fingerling |

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### A.10. Livestock

All of the corridor is grazed by domestic livestock. In the valleys and lower foothills, sheep graze during the winter and early spring. Cattle also graze here during the spring. A few areas are under intensive livestock grazing management. Within the corridor, the stocking rate varies from 11-42 acres per cow month with a median of 28 acres per cow month. Private agricultural land in the valleys winter livestock except for wet meadow areas which graze cattle yearlong under a rest-rotation grazing system. The higher ranges west of Circleville and through Dog Valley and Buckskin Valley are grazed by cattle in the summer under intensive livestock grazing management. Grazing is concentrated around BLM seedings in the spring. The average stocking rate is 12 acres per cow month.

### A.11. Scenic and Esthetic Quality

#### A.11.a Setting

The setting along the Sevier Valley corridor is placed in two categories of rural and developed range or forest land. See Appendix C for definitions of the various settings. The rural setting is found in Sevier Valley and northwest of Cedar City. In all, the corridor traverses through approximately 26 miles of this setting. The remaining 86 miles of the corridor are placed in the developed range or forest land setting.

#### A.11.b. Scenic Quality

The greatest portion of the corridor was rated in the minimum quality category of scenery. See Appendices C and D for descriptions of the different scenic categories. Both sides of the corridor were rated and considered separately as there were some differences in scenic quality noted within the corridor boundaries in specific areas.

From Sigurd to south of Monroe the scenery was rated in the moderate quality category. The rural valley setting with open background views of the Tushar Mountains, Cove Mountain, Sevier River, and the high mountains on the west, were some of the qualities that placed this area in the moderate category. The number of intrusions such as agricultural developments, powerlines and roads and highways in the valley do detract from the scene, and there is very little natural variety in the valley itself.

From Monroe to Marysvale, both sides of the corridor were rated as minimum quality scenery. From Marysvale to Circleville, the scenic quality of the west side of the corridor was rated as moderate, and the east side was rated as minimum. The corridor from Monroe to Circleville passes through developed rangeland and portions of rolling foothills covered with pinyon-juniper.

The entire east side of the corridor from Circleville to Cedar City has been given a minimum quality rating; the west side of the section has areas rated in both the minimum and moderate categories. The corridor passes through areas with a large amount of human disturbance, particularly near Parowan and Cedar City. The areas surrounding the small towns and cultivated lands are covered by pinyon-juniper. Sagebrush is found at the lower elevations. A large amount of developed rangeland and some agricultural acreages are present.

The approximate mileage breakdown is as follows:

East Side of Corridor

| | |
|---|---|
| Unique Quality | 0 miles |
| Moderate Quality | 48 miles |
| Minimum Quality | 62 miles |

West Side of Corridor

| | |
|---|---|
| Unique Quality | 0 miles |
| Moderate Quality | 55 miles |
| Minimum Quality | 55 miles |

### A.11.c Transportation Routes and Visual Areas

U. S. Highway 89 extends south through the corridor for approximately three miles. The highway again enters the corridor below Thompsonville and continues southward. U. S. Highway 89 is considered a national route (See Appendix C for ratings) and is a major link between California, Nevada, the other southwestern states and the northern national parks and northern states. Interstate 70 which will eventually parallel the corridor on the west from the Sigurd substation to Cove will also be rated as a national route. The corridor intercepts Highway U-20, a regional route, and crosses Interstate 15, a national route, north of Paragonah. Interstate 15 parallels the corridor on the east to Cedar City. All other roads and trails are of local importance and will not be rated.

A breakdown of visible areas as related to travel routes is as follows:

| | Foreground | Middleground | Background | Nonvisual |
|---|---|---|---|---|
| National routes | 14 miles | 70 miles | 44 miles | -- |
| Regional routes | 7 miles | 17 miles | 3 miles | -- |
| Local and non-visual routes | -- | -- | -- | 44 miles |

### A.12. Recreation Facilities and Sites

There are two main water bodies within the corridor. Glenwood Bottoms and Heppler Ponds, north of Annabella, are located along the eastern edge of the corridor. These lakes are noted for waterfowl hunting. Piute Reservoir, north of Junction, is located south of the corridor. This reservoir is used moderately for fishing and camping. Piute Reservoir State Park has camping facilities which have light to moderate use during summer months.

There are other recreation sites located within the corridor. These include the Ten Mile Creek Campground on state-owned land and a larger private recreation and therapeutic complex being built at the hot springs near Monroe. A potential recreation site has been inventoried at Bone Hollow Spring northeast of Paragonah on national resource land. There are no areas within the corridor with primitive characteristics.

The Monroe-Poverty Flat area is located within the corridor. This area has scattered amounts of semi-precious agate and is used by rockhounds. The Poverty Flat area also has a potential for outdoor recreation vehicle use, particularly organized motorcycle racing. Dog Valley and Buckskin Valley also are potential off-road vehicle areas.

## PART II. DESCRIPTION OF THE ENVIRONMENT

### A.13. Historical and Archaeological

No complete archaeological field survey has been made on this corridor; therefore, the full archaeological potential is not known. There are no currently designated national historic or archaeological sites within the corridor. (See letter from Utah State Historic Preservation Officer placed in Appendix G). There are numerous historical farm houses and settlements within the valley bottom. Several Indian battles took place within the area around 1850, but exact locations are not known at this time, and no physical evidence remains. White men have used the portion of the corridor on national forest lands since the early 1870's.

The old Spanish Trail generally follows the Sevier River from Salina south through Marysvale Canyon. This trail parallels the eastern side of the corridor and crosses it south of Thompsonville. The trail then parallels the eastern side of the corridor. The Fremont Trail (1853-54) joins the Spanish Trail below Piute Reservoir and both trails continue southwesterly, crossing the corridor in the Fremont Pass-Dog Valley area. The two trails parallel the corridor on the north until they meet and join the Smith Trail (1826-27) at the north end of Little Valley. All three trails are within the corridor for approximately seven miles. The trails then parallel the corridor on the east to Cedar City.

The Smith Trail enters the corridor below Sigurd and parallels it on the west until the trail turns westward at Clear Creek Canyon. The trail enters the corridor again in Little Valley as previously mentioned. All evidence of these trails has been destroyed through cultural improvements such as farming and road building.

Over 100 archaeological sites have been identified within the Sevier Valley, which was inhabited by the Sevier-Fremont culture from 780 (?) - 1280 A.D. Since no archaeological field surveys have been made (except on a very limited basis) to determine validity or importance of these sites, the recreation potential or scientific value is not currently known. In addition to these 100 identified sites, it is known there are numerous other archaeological sites in the Valley, some of which are suspected of being high in scientific value since they are still relatively intact.

Some archaeological sites are found in the area around Bone Hollow and a major archaeological area exists between Paragonah and Summit in the Parowan Valley. The Parowan-Fremont culture inhabited the area between 900 (?) - 1300 A.D. Many sites have been inventoried by the

University of California and the University of Utah. Sites are known to exist around the perimeter of the Little Salt Lake. An extensive archaeological area has been found north of the town of Summit. Part of this area as well as other smaller sites are within the corridor. The sites continue from Parowan Valley into Cedar Valley.

There is evidence that the Desert Archaic culture was present throughout the corridor. Historic Indian values are also found throughout the corridor.

### A.14. Minerals

#### A.14.a. Leasable Minerals

The entire corridor has a fair potential for oil and gas, based on U.S. Geological Survey reports and interest of oil companies. Almost all of the federal land is contained in existing oil and gas leases. However, there is no record of oil and gas production in this corridor.

The first 27 miles of the corridor from Sigurd south to Poverty Flat are included on areas designated by USGS as being prospectively valuable for geothermal steam. In addition to one existing state lease just east of Monroe, there are nine federal lease applications.

The valley bottom between Sigurd and Monroe is known to contain some deep salt deposits, some of which may extend under portions of the corridor.

#### A.14.b Locatable Minerals

The portion of the corridor crossing the Antelope Range is included in the Marysvale Mining District. This district is known to contain deposits of copper, iron, molybdenum, thorium, manganese, alunite, fluorite, and uranium. Of these various commodities, uranium is the most significant. This area contains the most important uranium-fluorite vein deposits in Utah. In 1964 there were one copper, one alunite, and five uranium mines producing in the area. In addition, a good portion of the federal lands within the corridor have been located as mining claims.

The portion of the corridor between Circleville and U. S. Highway 91 is underlain by the Roger Park formation which contains extensive low-grade iron deposits. Although little interest exists in this potential iron source at the present, future exploitation is definitely a possibility. This segment also contains clay deposits including one that is being mined in Dog Valley.

#### A.14.c. Salable Minerals

The corridor passes over terrain which provides a possible source for borrow material or gravel. At least nine borrow or gravel pits exist in or near the corridor.

### B. Cove Fort Corridor

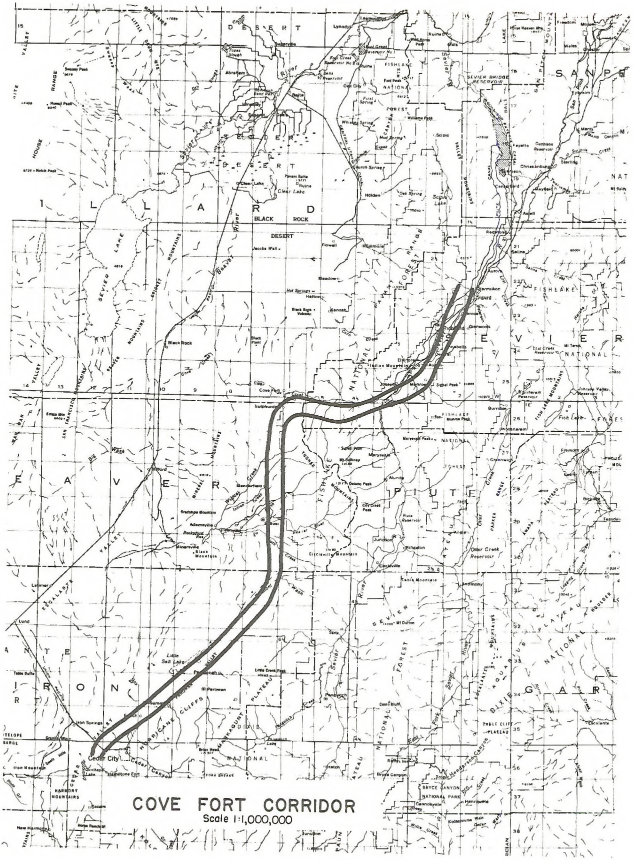
#### B.1. Introduction

This corridor extends south through the east side of Sevier Valley from the Sigurd substation to Clear Creek. From there, the corridor travels west across the Fishlake National Forest to Cove Fort and then south past Beaver through Parowan and Cedar Valleys to Cedar City.

A powerline constructed through this corridor would be approximately 117 miles long. About 35 percent of the length of the line or 41 miles would be constructed across national resource lands, and 52 percent of the corridor or 61 miles would cross private and state-owned land. Approximately 13 percent of the corridor or 15 miles would cross Fishlake National Forest. (See map on following page).

There are 19 towns or settlements located within or close to the corridor. There are over 9,000 people residing in these urban and rural communities, excluding Cedar City's 1970 population of 8,946 people. The larger communities of Beaver, Richfield and Parowan account for over 7,000 people. Most communities along the corridor except Richfield and Cedar City have shown considerable population decreases during the last ten year census period. In addition to these communities, there are several ranch and farm homes scattered through the corridor. The largest concentrations of these dwellings are found along the northern and southern ends of the corridor near Parowan, Cedar City and Richfield where the predominate land use is agriculture.

Almost the entire length of this corridor parallels the existing 138 KV line serving Beaver and Cedar City. The northern portion of the corridor deviates from the existing line alignment because of obvious environmental problems. Due to the nature of the terrain and existing cultural facilities, the line would have to be placed on a steep hillside. Interstate 70 will roughly parallel this 138 KV line from the Sigurd substation to Cove Fort. In addition to the existing 138 KV line, there are several smaller distribution lines scattered through the corridor.



COVE FORT CORRIDOR
Scale 1:1,000,000

### B.2. Air Quality and Electronic Interference

The air quality along this route is relatively free of pollution sources except near Sigurd. All federal and state minimum standards for air quality are exceeded. In the vicinity of major highways, there is a minor amount of vehicle pollutants. There is considerable electronic interference around the Sigurd substation caused by the concentration of transmission facilities.

There are no communication sites located within or adjacent to the corridor, but four sites are located within three to five miles of the corridor.

### B.3. Geology and Topography

From Sigurd south to Monroe, the route follows the eastern side of Sevier Valley. The relatively flat terrain consists chiefly of alluvial deposits.

At Monroe, this route heads west towards Clear Creek Canyon and crosses a group of low hills composed of partly consolidated alluvium of the Sevier River formation along with volcanic debris. This area could be expected to have a moderate potential for erosion. The west side of these low hills is bounded by a major fault of the Sevier-Tushar fault zone.

At the mouth of Clear Creek Canyon, the corridor crosses several small geologic faults. An additional group of faults is found about halfway through the canyon in the vicinity of Belknap Ranger Station, and two final faults are crossed at the west end of the canyon near Cove Fort. Initially, this portion of the corridor is fairly steep. The route then traverses the higher area south of the canyon that exhibits only moderate relief. Another area of high relief is crossed at the western entrance to the canyon. The rock types in this area are predominantly volcanic with some outcrops of the Sevier River formation.

From Cove Fort south to Beaver, the area has low relief. Deposits in this area are chiefly alluvial, with some volcanic outcroppings between Cove Fort and Pine Creek. South of Beaver, this route crosses a low range of hills composed of volcanic material interspersed with alluvium.

The remainder of this corridor is contained in Parowan and Cedar Valleys.

The valleys are relatively flat, and the route is underlain by alluvial deposits. These valleys are underlain by several, more-or-less parallel, northeast trending faults.

### B.4. Climate

Elevation varies along this route from about 5,000 feet to over 7,000 feet above Clear Creek. Climatic conditions vary with elevation. Annual precipitation at Cove Fort is approximately 13 inches. Beaver receives about 12 inches annually. The Parowan Valley area, the lowest point along the route, normally receives about 10 inches of precipitation annually. Elevations 6,000 feet and above receive about 16 or more inches of precipitation annually. The lower elevations receive their moisture predominately during June through December. Precipitation is divided equally between rain and snow. Higher elevations normally receive precipitation during the winter and early spring months in the form of snow.

Temperatures also vary with elevation. The frost-free season around Cove Fort normally is about 110 days. The Beaver area normally has a frost-free period of 106 days.

### B.5. Soil

There are seven different soil types along the corridor:

| SOIL TYPE [1] | MILES | ACRES DISTURBED[2] | % CORRIDOR | EROSION | RECOVERY |
|---|---|---|---|---|---|
| 54 | 44 | 176 | 38 | Mod to Low | 50% - 70% |
| 55 | 6 | 24 | 5 | Mod to low | 50% - 70% |
| 34 | 11 | 44 | 9 | Mod to low | 70% |
| 23 | 30 | 120 | 26 | Mod | 70% |
| 37 | 12 | 48 | 10 | Low | 70% |
| 68 | 9 | 36 | 8 | Mod | 30% |
| 56 | 4 | 16 | 4 | Mod to High | 30% - 50% |
|  | 116 | 464 | 100 |  |  |

---

[1] Refer to Appendix A for specific soil descriptions.

[2] Acreage disturbance was calculated using four acres disturbance per line mile.

### B.6. Vegetation

The corridor traverses various vegetative types, ranging from cropland in the valley bottoms, sagebrush along the benchland and foothills, and pinyon-juniper forests to mountain shrub in the low mountain passes. The sagebrush type consists of big sagebrush with mixtures of rabbitbrush, bitterbrush and a variety of native grasses and forbs. The pinyon-juniper type includes some sagebrush, bitterbrush, native grasses and forbs as understory plants. The mountain brush type may include oakbrush, bitterbrush, serviceberry, manzanita, scattered pinyon-juniper and white fir, sagebrush and native grasses and forbs. Vegetative cover is more complete at the higher elevations where moisture conditions are more favorable for plant growth. At lower elevations and drier areas, more bare ground is apparent in the vegetative type.

The vegetative types are listed as follows:

| Vegetative Type | Miles of Corridor | Percent | Affected Acreage 1/ |
|---|---|---|---|
| Cropland | 40 | 34 | 160 |
| Pinyon-juniper | 17 | 15 | 68 |
| Grass | 8 | 7 | 32 |
| Sagebrush | 34 | 29 | 136 |
| Mountain brush | 17 | 15 | 68 |
| | 116 | 100 | 464 |

### B.7. Water

Nine perennial streams are crossed by the corridor. All are important sources of irrigation water in both the Sevier Valley and the Beaver and Minersville areas. Several of the streams are important recreation resources.

The following streams are crossed by the corridor:

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1/ Affected acreage was calculated at four acres per line mile.

| Water Resource | Discharge | Sediment |
|---|---|---|
| Clear Creek | 26.80 cubic feet per second (cfs) | No records |
| Shingle Creek 1/ | No records | No records |
| Fish Creek 1/ | No records | No records |
| Mill Creek 1/ | No records | No records |
| Joe Lott Creek 1/ | No records | No records |
| Dry Creek 1/ | No records | No records |
| Cove Creek | No records | No records |
| Pine Creek | No records | No records |
| North Creek | 7.77 cfs | No records |
| Beaver River | 51.50 cfs | No records |
| South Creek | 4.70 cfs | No records |
| Fouth Fork North Creek | 22.90 cfs | No records |
| Indian Creek | 8.98 cfs | No records |
| Sevier River | 145.00 cfs (28 yr. ave.) | No records |

All streams flow in a straight course with fairly steep gradients. Sediment loads occur during spring runoff and during high intensity summer storms. These sediments are derived from throughout the watershed as a result of natural erosive processes in an arid area. The small town of Sevier takes its culinary water supply directly from Clear Creek. The Monroe flood control project is located within the corridor immediately east of Monroe.

### B.8. Wildlife

This corridor crosses deer winter range in the foothills east of Annabella and Monroe, then through the Clear Creek drainage and along the western foothills of the Tushar Mountains to the upper end of Buckhorn Flat north of Paragonah. Sixty miles of deer winter range are traversed by this corridor. Thirty-five of these sixty miles are considered critical winter range.

The foothills around Glenwood, Annabella and Monroe support local populations of chukar which are also found in lower Clear Creek Canyon. Sage grouse populations can be found on the west side of the Tushars in sage flats and creek bottoms. The corridor may cross the extreme western edge of wild turkey habitat in the vicinity of North Creek and Beaver.

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1/ Tributaries of Clear Creek. Discharge records are not maintained on these streams because of their minor importance.

High quality pheasant habitat is located throughout the Sevier Valley, while moderate to low quality habitat is found in Parowan and Cedar Valleys. Thirty-eight miles of pheasant habitat are traversed by this corridor.

A small population of California Valley quail exists on brushlands adjacent to agricultural fields north of Monroe.

A small scattered antelope herd is located on the Buckhorn Flat area north of Paragonah.

Two concentrated colonies of the threatened Utah prairie dog are located in Cedar Valley near Enoch and west of Summit. These sites are within the corridor and on private land.

Seventeen miles of wetlands are crossed by this corridor mostly in Sevier Valley and along mountain streams. Values of the wetlands in Sevier Valley were discussed earlier in relation to the Sevier Valley corridor. The streams provide some nesting habitat for waterfowl and shorebirds. In the winter small flocks of waterfowl utilize this stream habitat.

Bald eagles also winter along these streams and other wetlands. Golden eagles, rough-legged hawks, and red-tailed hawks winter throughout the corridor. Prairie falcons and an occasional peregrine falcon winter in Parowan and Cedar Valleys. Redtailed hawks, prairie falcons, and Golden eagles nest in the ledges north of Enoch. There is a possibility of peregrine falcons also nesting on these ledges.

### B.9. Fish

Seven creeks and two rivers would be crossed by this corridor. These streams contain natural populations of dace, shiners, and suckers. Carp exist in the Sevier River. The streams listed in the following table are stocked by the Utah Division of Wildlife Resources and support a sport fishery.

Fish Stocking of Streams Crossing Cove Fort Corridor

| Streams | No. Stocked/Yr. | Species | Type |
|---|---|---|---|
| Clear Creek | 7,000 | Rainbow Trout | Catchable |
| Shingle Creek | 1,000 | Rainbow Trout | Catchable |
| Fish Creek | 1,000 | Rainbow Trout | Catchable |
| Mill Creek | Unknown | Cutthroat Trout | Fingerling |

| Streams | No. Stocked/Yr. | Species | Type |
|---|---|---|---|
| Beaver River | 12,000 | Rainbow Trout | Catchable |
| Indian Creek | 2,500 | Rainbow Trout | Catchable |
| South Creek | 750 | Rainbow Trout | Catchable |
| | Unknown | Cutthroat Trout | Fingerling |

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### B.10. Livestock

All of the corridor is grazed by livestock, except the rougher terrain. Cattle and sheep are grazed in the winter and early spring. The stocking rate is 25-30 acres per cow month. Private agricultural lands are also used to graze livestock. Forest lands adjacent to the Clear Creek drainage are grazed by cattle during the summer. Around Sulphurdale sheep graze a BLM seeding during early June and late September. Cattle graze along the west foothills of the Tushar Range during the summer. Grazing in this area is seasonal with an approximate stocking rate of 11 acres per cow month. In Parowan and Cedar Valleys, private agricultural lands are used to winter livestock.

### B.11. Scenic and Esthetic Quality

#### B.11.a. Setting

The setting along the Cove Fort corridor is placed in the two categories of rural and developed range or forest land. See Appendix C for definitions of specific settings. The rural setting is in three areas of the corridor. These areas are found through Sevier Valley east of Beaver and northwest of Cedar City. The corridor crosses approximately 28 miles of rural setting with the remaining 87 miles in the developed range or forest land setting.

#### B.11.b. Scenic Quality

The corridor was almost evenly divided between the moderate and minimum scenic categories with only a small portion of the corridor in the unique category. See Appendices C and D for definitions of scenic categories.

From Sigurd to the National Forest boundary in the Dry Wash area the scenery was rated moderate. The rural setting with open background views of the Tushar Mountains, Cove Mountain, the high west mountains and frequent viewing of the Sevier River were some of the qualities that placed the area in this category. Agricultural intrusions plus roads, highways, power lines, and a lack of natural variety within the valley keeps this area from having a unique classification. The area within Clear Creek Canyon, although not having an open view due to the narrowness of the canyon, still has characteristics which place it in the unique category. The existing agricultural developments do not detract from the scene in this area.

From Clear Creek Canyon to north of Beaver the scenery within the corridor was rated moderate. From this point southward to Cedar City the scenery is rated minimum. The primary vegetation is pinyon-juniper on the rough foothill country and rangeland with some agricultural acreages through the valleys. A large amount of human disturbance distracts from the scene in this portion of the route.

The approximate mileage breakdown is as follows:

| | |
|---|---|
| Unique Quality | 4 miles |
| Moderate Quality | 56 Miles |
| Minimum Quality | 57 miles |

### B.11.c. Transportation Routes and Visual Areas

All travel routes discussed here are of national importance. See Appendix C for definitions of travel routes, visual areas and terms used for quality ratings. There are no regional travel routes and all other roads and trails of local importance were not rated.

U. S. Highway 89 travels south through the corridor for approximately three miles, and then parallels the corridor on the west to Clear Creek. The proposed Interstate 70 will be a short distance to the west of U. S. Highway 89 in this part of Sevier Valley.

Westward through Clear Creek Canyon the proposed route of I-70 was rated rather than present Highway U13. Much of the corridor and the existing 138 KV line is within the fore- and middle-ground view of these highways. There are a few short sections of existing line that are in the nonvisual area.

Several outstanding views and vistas exist along the I-70 alignment. These include the volcanic tuff formations in Clear Creek Canyon, the mud formations in Mill Creek, and the Tushar Mountains south of Mud Flats.

Interstate 70 connects with Interstate 15 near Cove Fort. Interstate 15 travels through the corridor to approximately two miles south of the town of Sulphurdale, then parallels the western side of the corridor until entering the corridor approximately five miles south of

Beaver. Interstate 15 does not leave the corridor until it reaches Buckhorn Flat. From Buckhorn Flat, I-15 parallels the corridor on the east for the remainder of the route to Cedar City.

A breakdown of visible areas as related to travel routes is as follows:

| | Foreground | Middleground | Background | Nonvisual |
|---|---|---|---|---|
| National routes | 48 miles | 74 miles | 38 miles | -- |
| Regional routes | 0 | 0 | 0 | -- |
| Local and non-visual routes | -- | -- | -- | 33 miles |

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### B.12 Recreation Facilities and Sites

Glenwood Bottoms-Heppler Ponds north of the town of Annabella, are located within the corridor. These lakes are known for their excellent waterfowl hunting. The largest hot springs in the general area are located east of Monroe. Most of these springs are privately owned and a large recreation facility is planned in the area. A trailer court and mobile home complex are now completed and an old swimming pool is being renovated. The corridor is located immediately east of this complex. Summer recreational camping occurs on the National Forest at Castle Rock Campground, near the Belknap Ranger Station. Heavy visitor use also occurs at this site during deer hunting season. Moderate camping, picnicking and fishing occur along the valley bottoms and roadsides in Clear Creek, Mill Creek, Fish Creek and Shingle Creek. Potential recreation sites are found within the corridor on national resource land at Indian Creek, lower Beaver Canyon and South Fork Fishing Hole.

The area between Birch and South Creeks is considered a family use area for cutting Christmas trees.

Some snowmobiling occurs along the corridor near Beaver in a section approximately 10 miles long. Most of the area used for this purpose extends eastward onto the National Forest; only a small portion of the snowmobiling area is west of the corridor. Residents of Beaver are the main users of this area.

### B.13 Historical and Archaeological

No complete archaeological field survey has been made on this corridor; therefore, the full archaeological potential is not known.

## PART II. DESCRIPTION OF THE ENVIRONMENT

There are no currently designated national historic sites within the corridor, and none have been considered for nomination to the National Register of Historic Places. The Cove Fort historical site is located a short distance outside the corridor. The fort is a mosaic stone building erected in 1867 by Ira N. Hinckley for protection against Indian attacks. The fort is in excellent condition and is now privately owned and maintained. White men have used the portion of corridor on National Forest land since the early 1870's.

The small town of Sulphurdale is an historic mining town where considerable sulphur mining activity took place. There is also an historic gold mining area on the east side of the corridor in the Indian Creek vicinity.

The corridor parallels the Old Spanish Trail from Sigurd south to Clear Creek, then turns westward to Cove Fort. The Smith Trail, (1826-27) parallels the corridor on the west through Sevier Valley, then westward to Cove Fort. At Cove Fort it turns southward along with the Fremont Trail (1853-54), in the northern end of Little Valley. The corridor then parallels all four trails on the east for the remainder of the route to Cedar City.

There are at least 39 inventoried archaeological sites within and adjacent to the corridor. Most of these sites are at the lower elevations in the valleys, and they are associated with the Sevier-Fremont culture which inhabited the region (780 (?) - 1260 A.D.)

There are archaeological areas near Heppler Ponds, Monroe Hot Springs, and the surrounding area where U. S. Highway 89 and U-13 meet. There are at least 25 archaeological sites in Clear Creek and Mill Creek Canyons within the corridor. These latter sites consist of village sites, lithic sites, and petroglyph sites. Several anthropological papers have been published on this area. Part of the book Rock Art of Utah describes the petroglyphs in the corridor. There is also an archaeological area around the Cove Fort historic site which extends into the corridor.

There are many small caves, hunting camps and petroglyph sites in and along the corridor from Cove Fort south into the Parowan Valley. A major archaeological area exists between Paragonah and Summit. Evidence of the Parowan-Fremont culture (900 (?) - 1300 A.D.) can be found along the lower portions of this corridor. Many of these sites have been inventoried by the University of Utah and the University of California. Sites are known to exist around the perimeter of the Little Salt Lake and an extensive archaeological area has been found north of Summit. Part of this area as well as other smaller sites are within the boundaries of the corridor. The sites continue from the Parowan Valley into Cedar Valley.

There is evidence that components of the Desert Archaic culture were present throughout the corridor. Historic Indian sites, mainly Paiute, are also found along the corridor.

### B.14. Minerals

#### B.14.a. Leasable Minerals

U. S. Geological Survey reports and oil company interests indicate that the entire corridor has at least a slight potential for oil and gas, but the best potential exists in the portions of the corridor located in Sevier Valley and Parowan Valley. Only these two segments contain existing oil and gas leases. There are no known oil and gas wells in the corridor.

The first 25 miles of the corridor from Sigurd to Sevier are contained in an area designated by USGS as a potential geothermal resource area. In addition to this, a seven-mile stretch from the west side of the Tushar Mountains to Pine Creek south of Cove Fort is also listed as having geothermal potential. In these two areas a total of 49 lease applications have been filed on or near the corridor.

The Sevier Valley contains some salt deposits at depths that extend underneath the corridor.

#### B.14.b. Locatable Minerals

Sulphur is the most important locatable mineral in this corridor. In the area between Cove Fort and Pine Creek along the Tushar Mountains native sulphur is found in cylindrical masses or pipes about 10 to 15 feet in diameter. The sulphur occurs as irregular banded veins or fissures in beds of volcanic tuff. Although none of these deposits are presently being mined, they have been and could be mined in the future.

Significant clay deposits are found in Clear Creek Canyon as alteration products in the Joe Lott tuff formation. Two clay pits are presently being worked in the vicinity of Mill Creek.

Other locatable minerals including lead, silver, and uranium have been mined near the corridor between Cove Fort and Beaver. However, none of these deposits are extensive or known to extend into the corridor.

### B.14.c. Salable Minerals

Most of the alluvial material in this corridor provides a potential source for gravel and borrow material. At least 20 material sites or pits are known to exist in or near this proposed corridor.

## C. Grass Valley Corridor

### C.1. Introduction

This corridor extends south from the Sigurd substation through Grass Valley to Otter Creek Reservoir. South of Otter Creek Reservoir, the corridor extends westerly near Kingston Canyon to U. S. Highway 91, then south through Parowan and Cedar Valleys to Cedar City. (See map on next page).

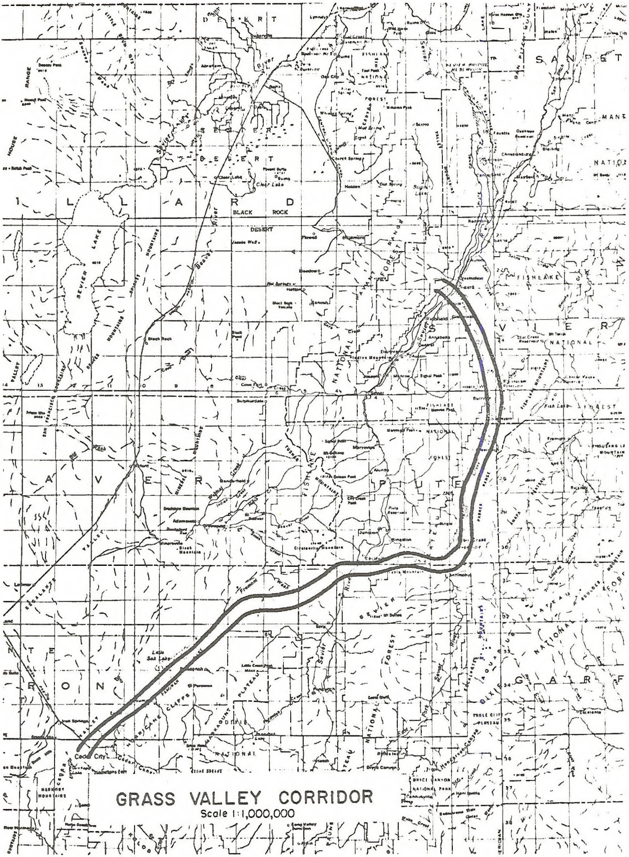
This corridor is approximately 130 miles long. About 39 percent, or 51 miles, crosses national resource land, while 59 percent, or 76 miles, crosses private and state owned lands. Approximately two percent of the corridor, or three miles, crosses National Forest land.

There are 13 towns or settlements located within or adjacent to the corridor. There are approximately 3,300 people residing in these rural communities, excluding Cedar City's 1970 population of 8,946 people. All the communities except Cedar City have experienced substantial population decreases during the last ten year census period. In addition, there are several ranch and farm homes scattered through the corridor. The largest concentration of these dwellings is found along the southern end of the corridor near Parowan and Cedar City where agricultural land predominates.

Portions of the corridor are presently being used for high voltage transmission lines. A 230 KV transmission line is located in the corridor from north of Paragonah to north of Cedar City. The portion of the corridor near Kingston Canyon is relatively undisturbed by man-made developments; however, there is one small distribution line through the canyon. The portion of the corridor from Circleville to U. S. Highway 91 is also relatively undisturbed by transmission lines.

### C.2. Air Quality and Electronic Interference

Air quality along this corridor is relatively free of pollution sources except near Sigurd, where dust is emitted into the atmosphere by two gypsum plants and two plasterboard mills. There are some localized areas of dust, caused by vehicles travelling on unpaved roads. Prevailing wind is from the southwest, and occasionally there are inversion conditions which block movement of particulate matter out of the valley



## GRASS VALLEY CORRIDOR

Scale 1:1,000,000

areas. Minor vehicle pollution occurs in the vicinity of major highways.

No communication sites are located within or adjacent to the corridor. However, there are six sites located within three to five miles of the corridor.

### C. 3. Geology and Topography

From Sigurd southeast to Burrville, the route goes from the Sevier River Valley across a group of low hills. The first hills are composed primarily of sandstones and shales of the Arapien geologic formation. The remainder are composed of volcanics which include tuff and volcanic breccia. Although the terrain in this area is fairly rough, the erosion potential is minimal.

South through Grass Valley to the east fork of the Sevier River, the terrain is relatively level. Alluvial and colluvial deposits predominate, but some outcrops of the Bullion Canyon volcanics are found within the corridor. The corridor parallels a major fault located on the east side of the valley. East of Otter Creek Reservoir, Quaternary landslide masses extend into the corridor.

West across the north part of Table Mountain, the terrain becomes rugged. The Bullion Canyon volcanics predominate in this area. Two faults are crossed in the hills, and two additional faults are crossed on the east side of Circle Valley.

The remainder of this corridor is described in the Sevier Valley Corridor section.

### C.4. Climate

The elevation along this route varies from about 5,000 to over 8,000 feet near the Buckskin Valley. Climatic conditions and precipitation differ with these elevations. Annual average precipitation is between 8 and 9 inches at lower elevations. Higher elevations receive slightly more precipitation. Precipitation is fairly evenly distributed through the year. Precipitation during the winter months falls as snow and during the summer months as rain. Temperatures also vary with elevation. The frost-free season is generally around 90 to 120 days. The frost-free season near Buckskin Valley is probably around 90 days.

### C.5. Soil

Twelve soil types have been identified within the corridor. Most of the soils found in valley areas are suitable for agriculture. Soils found on foothills and mountain slopes produce forage for livestock grazing and wildlife habitat. The following table lists the identified soil types, approximate acreages that would be affected by a line through this corridor, percent of each soil type in the corridor, erosion hazard and the potential for recovery after disturbance when seeded with suitable grass, forbs and browse. The acreages listed are based on four acres per line mile and could vary with actual line location within the corridor.

| SOIL TYPE 1/ | MILES | ACRES DISTURBED 2/ | % CORRIDOR | EROSION | RECOVERY |
|---|---|---|---|---|---|
| 54 | 31 | 124 | 23 | Mod to Low | 50% - 70% |
| 34 | 5 | 20 | 4 | Mod to Low | 70% |
| 37 | 5 | 20 | 4 | Low | 70% |
| 10 | 10 | 40 | 8 | Mod | 50% - 70% |
| 11 | 22 | 88 | 17 | Low | 30% - 50% |
| 38 | 14 | 56 | 11 | Mod to Low | 70% |
| 33 | 12 | 48 | 9 | Mod to Low | 30% - 50% |
| 1 | 9 | 36 | 7 | Low | 70% |
| 23 | 5 | 20 | 4 | Med | 70% |
| 32 | 3 | 12 | 2 | Mod to Low | 70% |
| 68 | 9 | 36 | 7 | Mod | 30% |
| 56 | 5 | 20 | 4 | Mod to High | 30% - 50% |
|  | 130 | 520 | 100 |  |  |

### C.6. Vegetation

The corridor traverses six vegetative types, ranging from cropland in the valleys, sagebrush in the low foothills to pinyon-juniper and to mountain brush types in the low mountain passes. The corridor also crosses a small amount of grassland and conifer trees.

The sagebrush type is intermixed with rabbitbrush and greasewood in the small draws and bottom lands, while a mixture of sagebrush and native grasses is present on the low foothill slopes and benches. The pinyon-juniper stands include an understory of sagebrush, grasses and forbs. The mountain brush type includes serviceberry, oak, snowberry, bitterbrush, manzanita, native grasses and scattered pinyon and juniper trees. An area of sagebrush occurs in the hills surrounding Dog Valley at the head of Fremont Canyon. Some grassland and a small amount of timber occur on the southeast slopes of the Tushar Mountains within the Fishlake National Forest.

1/ Refer to Appendix A for specific soil descriptions.

2/ Acreage disturbance was calculated using four acres disturbance per line mile.

## PART II. DESCRIPTION OF THE ENVIRONMENT

General vegetative types within the corridor are listed below. In addition, the miles and percent of each vegetative type crossed by the corridor are also tabulated.

| Vegetative Type | Miles of Corridor | Percent | Affected Acreage [1] |
|---|---|---|---|
| Pinyon-juniper | 28 | 21 | 112 |
| Sagebrush | 53 | 41 | 212 |
| Cropland | 36 | 28 | 144 |
| Mountain brush | 10 | 8 | 40 |
| Conifers | 1 | 1 | 4 |
| Grass | 2 | 1 | 8 |
| | 130 | 100 | 520 |

### C.7. Water

The corridor crosses several perennial streams and passes adjacent to Koosharem and Otter Creek Reservoirs. The streams are utilized for irrigation and both reservoirs are popular fishing and recreation sites. All of the streams flow fast and in a straight course. Sediment problems occur during high intensity summer storms. The sediment is a result of natural erosive processes in an arid area. Other than some sediment, water quality is high. There are no notable mineral or sewage pollution sources. Otter Creek Reservoir has a storage capacity of 55,000 acre feet and stores water from Otter Creek and water diverted from the east fork of the Sevier River.

Available stream flow data are shown below. No data are available on sediment loads.

| Water Resources | Discharge | Sediment |
|---|---|---|
| Peterson Creek | No records | No records |
| Otter Creek | 13.20 cubic feet per second (cfs) | No records |
| East Fork Sevier River (Kingston) | 78.30 cfs | No records |
| Sevier River (near Kingston) | 126.00 cfs | No records |

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[1] Affected acreage was calculated using four acres of disturbance per line mile.

## C.8. Wildlife

This corridor passes through 58 miles of deer winter range in Bear Valley, the eastern slopes of Grass Valley, the northern portions of the Dutton Range, Birch Creek, Dog Valley, Buckskin Valley, and Bone Hollow. Critical deer winter range is crossed in Bear Valley, Lost Creek, Birch Creek, and Bone Hollow. Some elk winter range is crossed east of Otter Creek Reservoir. Chukars occur locally in these same foothills around Glenwood and Kingston Canyon.

Nine miles of deer summer range and two miles of blue grouse habitat are crossed in the higher ranges around Dog and Buckskin Valleys. Also, in the higher valleys sage grouse occur, especially in Dog and Buckskin Valleys. One strutting ground is crossed in Buckskin Valley. Lower density sage grouse populations are also located in Bear and Grass Valleys. Their strutting grounds in these areas have not been inventoried. Antelope range is crossed in the foothills between Sigurd and Glenwood, east of Otter Creek Reservoir, and in the Buckhorn Flat area north of Paragonah.

The larger valleys of Sevier, Parowan, and Cedar contain pheasant habitat, especially in Sevier Valley. A few pheasants are also found around Koosharem and Angle. Altogether 19 miles of pheasant habitat are traversed by this corridor.

Two sites of the threatened Utah prairie dog are located on agricultural lands south and east of Enoch and one site north of Koosharem Reservoir. These sites are within the corridor.

Six miles of wetland habitat are crossed by this corridor. The meandering Otter Creek in Grass Valley and its adjacent meadows, Otter Creek Reservoir, and the Sevier River near Antimony and Circleville are other important wetland habitat areas. Sevier Valley and Grass Valley are waterfowl migration routes. Canadian geese utilize the eastern shore of Otter Creek Reservoir as a migration stop and wintering area. Some Canadian geese also nest in Grass Valley where artificial nesting structures have been constructed for their use. Waterfowl and other associated birds also use the Sevier River for nesting and wintering areas during cold weather when the waters freeze.

These same wetlands are concentration areas for wintering bald eagles. Golden eagles, rough-legged hawks, red-tailed hawks, and marsh hawks occur year-round in all the lower valleys. Prairie falcons and an occasional peregrine falcon winter in Cedar and Parowan Valleys.

### C.9. Fish

The waters listed in the following table all contain populations of chub, dace and suckers. However, Otter Creek from Koosharem Reservoir to, and including Otter Creek Reservoir, has been periodically treated by the Utah Division of Wildlife Resources to remove nongame fish. These waters were then restocked with trout. All waters listed in the table support a sport fishery.

Fish Stocking of Streams Crossing Grass Valley Corridor

| Streams | No. Stocked/Yr. | Species | Type |
|---|---|---|---|
| Otter Creek | 6,000 | Rainbow trout<br>Brown trout<br>Brook trout | Catchable<br>Fingerling<br>Fingerling |
| Lost Creek | Unknown | Brook trout | Fingerling |
| East Fork, Sevier River | 6,000 | Rainbow trout | Catchable |
| Sevier River | 10,000 | Brown trout | Fingerling |
| South Fork, Sevier River | 12,000 | Rainbow trout | Catchable |
| Otter Creek Reservoir | 225,000 | Rainbow trout | Fingerling |

### C.10. Livestock

Cattle and some sheep graze the lower valleys during the winter and early spring. Most of the allotments are grazed seasonally except for a few around the narrows in Grass Valley which are under intensive livestock grazing management. Stocking rate varies from 17 to 30 acres per cow month. Private agricultural lands in the valleys along the corridor are used to winter both cattle and sheep. The wet meadows in the Glenwood Bottoms are grazed year-round by cattle.

At higher elevations around Dog and Buckskin Valleys summer cattle grazing is permitted under intensive livestock grazing management. Twelve acres per cow month is the stocking rate.

In the Buckhorn Flat area sheep are wintered at a stocking rate of 28 acres per cow month.

### C.11. Scenic and Esthetic Quality

#### C.11.a. Setting

The setting along the Grass Valley Corridor is placed in the rural or developed range or forest land categories. See Appendix C for the definitions of the various settings. The rural setting is found in four areas of the corridor: in Grass Valley from Burrville to Greenwich, around Antimony, Circleville, and north of Cedar City. This totals approximately 25 miles of rural setting within the corridor. The remainder of the corridor is developed range or forest land. This category encompasses approximately 105 miles of this corridor.

### C.11.b. Scenic Quality

The major portion of this corridor has been rated and placed in the minimum quality category. See Appendices C and D for definitions of the various classes of scenic quality. Both sides of the corridor were rated and constructed separately as there were some differences between the scenic quality noted within the boundaries of the corridor.

From Sigurd to west of Antimony, the corridor is rated minimum quality. The corridor passes through Sevier and Grass Valleys which are primarily open rangelands with pinyon-juniper forest across the foothills. There is some farmland in both valleys and in the corridor north of Antimony. From west of Antimony to near the Muddy Waters Campground, the corridor is rated unique quality. This part of Kingston Canyon is quite deep, narrow, and very scenic.

From Muddy Waters Campground to Dog Valley on the west side of the corridor, the scenic quality has been rated moderate. This portion of the corridor has rolling foothills with pinyon-juniper vegetation. The east side of the corridor from Pine Creek to Dog Valley and continuing on to Cedar City has been given a minimum quality rating. The corridor passes through areas with a high amount of human disturbance, particularly in the Parowan Valley and Cedar Valley area northeast of Cedar City. The area is pinyon-juniper and sagebrush flat country until the line enters the southern part of Little Valley where the land becomes developed range with some agricultural acreages.

The approximate mileage breakdown of each scenic category is as follows:

East Side of Corridor

| | |
|---|---|
| Unique Quality | 10 miles |
| Moderate Quality | 8 miles |
| Minimum Quality | 112 miles |

West Side of Corridor

| | |
|---|---|
| Unique Quality | 10 miles |
| Moderate Quality | 15 miles |
| Minimum Quality | 105 miles |

### C.11.c. Transportation Routes and Visual Areas

Many roads and trails cross through and around the proposed corridor. In most instances, the corridor is within a mile or less of scenic roads or trails. See Appendix C for definitions used in determining transportation routes and visual areas.

Highway U-24 is located within the corridor from Sigurd to Bear Valley. At Bear Valley, this highway leaves the corridor and parallels it on the east for a short distance. Highway U-62 also crosses the corridor south of Burrville, then it roughly parallels the corridor on the west to Otter Creek Reservoir. At Otter Creek Reservoir, Highway U-62 again enters the corridor and eventually connects with U. S. Highway 89 near Kingston. Highway U-22 also crosses the corridor near Otter Creek Reservoir. U. S. Highway 89 crosses the corridor below Circleville. Highway U-20 enters the corridor at Buckskin Valley and joins Interstate 15 at Buckhorn Flat north of Paragonah. Interstate 15 parallels the corridor on the east to Cedar City.

All of the above mentioned highways are of regional importance except Highway U-24, U. S. Highway 89, and Interstate 15, which are considered national routes. Highway U-24 links the northern portion of the state to the southern national parks. Highway U. S. 89 and Interstate 15 are major links between California, Nevada and the other southwestern states and the northern national parks and northern states. All other roads are of local importance, and they will not be rated.

A breakdown of visible areas as related to travel routes is as follows:

| | Foreground | Middleground | Background | Nonvisual |
|---|---|---|---|---|
| National routes | 25 miles | 67 miles | 36 miles | -- |
| Regional routes | 27 miles | 61 miles | 40 miles | -- |
| Local and non-visual routes | -- | -- | -- | 25 miles |

### C.12. Recreation Facilities and Sites

There are several recreational facilities and sites located within and close to the corridor. Otter Creek Reservoir is located on the west side of the corridor just north of the junction of Highway U-62 and U-22. This reservoir is a popular fishing and camping area during the summer months. Recreational developments include camping facilities at the Otter Creek Reservoir State Park. Bureau of Land Management recreation sites within or close to the corridor include facilities at Long Needles Campground and Muddy Waters Campground. A potential recreation site has been inventoried at Bone Hollow Springs northeast of Paragonah. Numerous recreation occupancy spots are located throughout the corridor, particularly in Kingston Canyon. These spots are popular during the deer hunting season. There are no areas within the corridor with primitive characteristics.

### C.13. Historical and Archaeological

No complete archaeological field survey has been made on this corridor; therefore, the full archaeological potential is not known.

There are no currently designated national historic sites within the corridor. No sites have been considered significant enough for nomination to the National Register of Historic Places. The Red Cedar Grove Indian Treaty Site is located within the corridor north of Koosharem, and the homestead where Butch Cassidy grew up, located south of Circleville, is also within the corridor.

The Fremont Trail (1853-54), enters the corridor in Grass Valley and parallels the corridor on the west and north through Kingston Canyon where the trail meets the Old Spanish Trail west of Kingston. The trails continue southward through Circleville Canyon and across the corridor. The trails again enter the corridor in the Fremont Pass-Dog Valley area, and they parallel the corridor on the north until they meet and join the Smith Trail (1826-27), at the north end of Little Valley. The trails then parallel the corridor on the east to Cedar City.

Many archaeological sites have been inventoried within and adjacent to the corridor in the Sevier-Grass Valley area by a study team from Brigham Young University. Most of these are in the lower valley areas and are associated with the Sevier-Fremont culture which existed from approximately 780 (?) - 1260 A.D. There is also evidence that components of the Desert Archaic culture were present in the corridor. Historic Indian values are also present.

Known archaeological areas are found from the southern tip of Otter Creek Reservoir westward through Kingston Canyon along the east fork of the Sevier River. Other sites are found in the area around Bone Hollow Spring.

A major archaeological area exists between Paragonah and Summit in Parowan Valley. Evidence of the Parowan-Fremont culture (900 (?) - 1300 A.D.) has been found in this area. Many sites have been inventoried by the University of Utah and the University of California. Sites are known to exist around the perimeter of the Little Salt Lake and an extensive archaeological area has been found north of the town of Summit. Part of this area as well as other smaller sites are within the corridor. The sites continue from Parowan Valley into Cedar Valley.

### C.14. Minerals

#### C.14.a. Leasable Minerals

A fair potential for oil and gas exists throughout the entire length of this corridor, as indicated by U. S. Geological Survey reports and interests of oil companies. There are no producing oil and gas wells within the limits of the corridor, but the majority of federal land in the corridor is presently under lease for oil and gas.

There are no existing applications for federal geothermal steam leases within the corridor. However, the first five miles of the corridor are contained in an area considered by USGS as having a potential for geothermal steam.

#### C.14.b. Locatable Minerals

The first three miles of the corridor cross over outcrops of the Arapien formation containing known deposits of gypsum. In this area the gypsum bed has an average thickness of 25 feet, with some beds known to reach a thickness of 100 feet. Bestwall Gypsum Company has one operating gypsum quarry within the corridor. Perlite is also mined in this same vicinity.

The potential for a low-grade iron deposit exists between Circleville and U. S. Highway 91.

In Dog Valley some clay deposits are known to exist, and one is presently being mined.

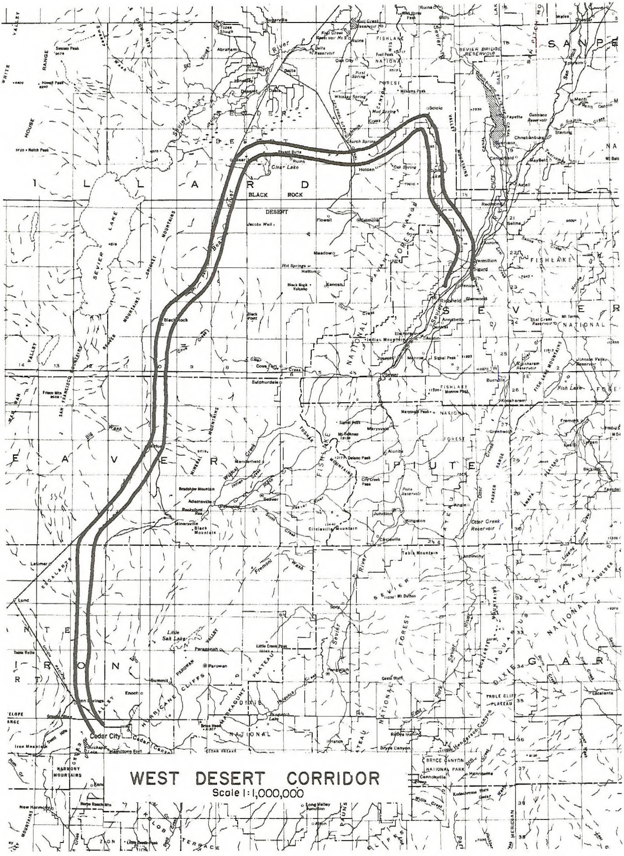
#### C.14.c. Salable Minerals

The corridor contains extensive deposits of alluvium most of which would be suitable for gravel or borrow material. Because of low demand due to a small population along this route, only about six material sites are found within the corridor.

## D. West Desert Corridor

### D.1. Introduction

This corridor extends north from the Sigurd substation to south of Scipio, then west across a small portion of the Fishlake National Forest to Clear Lake where it follows a southerly direction paralleling the Union Pacific railroad tracks to Iron Springs. (See map on next page).



WEST DESERT CORRIDOR
Scale 1:1,000,000

## PART II. DESCRIPTION OF THE ENVIRONMENT

This corridor is approximately 160 miles long. About 53 percent of the corridor, or 85 miles, crosses national resource land, and 41 percent, or 66 miles, crosses private and state land. Approximately 6 percent, or 9 miles, of the corridor extends across National Forest land.

There are 8 towns or settlements located within or close to the corridor. There are about 3,000 people living in these communities, excluding Cedar City's 1970 population of 8,946 people. The community of Milford accounts for slightly less than half of the population residing within or close to the corridor. There are also scattered farm and ranch homes located throughout the corridor. There are no definite concentrations of these scattered farmsteads as is found along the other corridors.

This corridor closely parallels a 230 KV line from Sigurd to Clear Lake. From Clear Lake the corridor parallels the Union Pacific railroad tracks to the Nada railroad station. There are some distribution lines located along this portion of the corridor. There are also some distribution lines located along the southern end of the corridor near Cedar City.

### D.2. Air Quality and Electronic Interference

Air quality along this corridor is relatively unaffected by pollution. All federal and state minimum standards for air quality are exceeded. There are some localized areas of dust caused by vehicular use of unpaved roads during dry seasons. Airborne dust is noticeable at times in Milford Valley toward Black Rock during high or even moderate winds. The major highways slightly degrade the air quality. The Union Pacific railroad paralleling the corridor also contributes to somewhat lowered air quality. This source is very localized and wind movements effectively dissipate the pollutants.

There are two communication sites located within this corridor and one located close to the corridor. One heavily used site is located on the Scipio Summit and one site is located just outside of Cedar City.

### D.3. Geology and Topography

From Sigurd north of Cedar Ridge Canyon, the terrain is relatively flat. In the vicinity of Red Canyon, the route crosses a group of low hills formed by sandstone and limestone of the Green River formation. Geologic faulting in this area is rather extensive. At the south end of Round Valley, the terrain is again relatively flat.

South of Scipio, the corridor crosses through Scipio Pass. The terrain through the pass is moderately rugged, and consists primarily of Paleozoic limestones and shales.

The terrain throughout the remainder of the corridor exhibits low relief crossing primarily over alluvial deposits and lake bed sediments. Some volcanic lava flows are crossed in the vicinity of Pavant Butte. North of Clear Lake, the corridor crosses some marshland.

Several faults are crossed as the route enters Cedar Valley west of Cedar City.

### D.4. Climate

Elevation along route ranges from 5,000 to 7,000 feet. Climatic conditions and precipitation differ with the elevation. Annual precipitation around Scipio is approximately 11 inches and Milford averages around 8 inches annually. Precipitation around Scipio is rather evenly distributed throughout the year with approximately equal amounts of rain and snow. A similar situation exists for the Milford area.

Winds of moderate intensity are frequent during summer months (April through October). Maximum wind speeds usually average 30 to 50 miles per hour from the southwest.

The frost-free season around Scipio is from April 24 to September 13, for a total of about 110 days. The frost-free season around Milford is from April 22 to September 30, for a total of 130 days.

### D.5. Soil

There are 13 soil types identified along the West Desert corridor. Most of the soils along this route are more suited for livestock forage production and wildlife habitat than agriculture. The following table indicates the soil type number, approximate acreages affected by the line, percent of each soil type, erosion hazard and the potential for recovery after disturbance when seeded with suitable grass, browse and forbs. Depending on where the line would be constructed in the corridor, the soil type acreages could vary.

| SOIL TYPE 1/ | MILES | ACRES DISTURBED 2/ | % CORRIDOR | EROSION | RECOVERY |
|---|---|---|---|---|---|
| 54 | 17 | 68 | 11 | Mod to Low | 50% - 70% |
| 32 | 4 | 16 | 2 | Mod to Low | 70% |
| 34 | 15 | 60 | 9 | Mod to Low | 70% |
| 56 | 8 | 32 | 5 | Mod to High | 30% - 50% |
| 69 | 2 | 8 | 1 | Low | 30% |
| 68 | 44 | 176 | 27 | Mod | 30% |
| 59 | 20 | 80 | 13 | Mod | 30% |
| 1 | 3 | 12 | 2 | Low | 70% |
| 23 | 5 | 20 | 3 | Med | 70% |
| 29 | 5 | 20 | 3 | Low | 70% |
| 73 | 14 | 56 | 9 | Low | 30% |
| 75 | 5 | 20 | 3 | Low | 30% |
| 55 | 20 | 80 | 13 | Mod to Low | 50% - 70% |

### D.6. Vegetation

A variety of vegetative types are crossed by this corridor. The sagebrush type appears in the foothills northwest of Sigurd where it mixes with scattered pinyon-juniper, rabbitbrush and native grasses. It occurs also on the valley floor along the west segment of the corridor in almost pure stands or mixed with shadscale, rabbitbrush and grasses. Extensive areas of greasewood occur along the Union Pacific railroad tracks, as well as areas of saltbush and shadscale.

The following table represents each vegetative type, the number of miles the corridor crosses and the percent of each.

| Vegetative Type | Miles of Corridor | Percent | Affected Acreage 3/ |
|---|---|---|---|
| Cropland | 35 | 22 | 140 |
| Pinyon-juniper | 21 | 13 | 84 |
| Greasewood | 31 | 19 | 124 |
| Sagebrush | 33 | 20 | 132 |
| Grass | 15 | 9 | 60 |
| Weeds | 4 | 3 | 16 |
| Saltbush | 14 | 9 | 56 |
| Mountain shrub | 8 | 5 | 32 |
|  | 161 | 100 | 644 |

---

1/ Refer to Appendix A for individual soil descriptions.

2/ Affected acreage was calculated using four acres disturbance per line mile.

3/ Acreage affected is calculated on a four acre per line mile disturbance.

### D.7. Water

The corridor crosses Willow and Maple Creeks, which are small perennial streams adjacent to Scipio Lake, and across the lower end of Clear Lake. Both streams and Scipio Lake are used for irrigation. Clear Lake is a waterfowl refuge managed by the Utah State Division of Wildlife Resources. The lake and marsh cover about 2,000 acres of land. They are fed by Clear Lake Spring which has an annual average discharge of 20 cubic feet per second. No discharge or sediment data are available on either stream. Water quality is high and there is no significant mineral or sewage pollution.

### D.8. Wildlife

Thirty-eight miles of deer winter range are traversed by this corridor mainly along the eastern foothills of the Pavant Range and around Scipio Summit. Nine miles of this range are considered critical deer winter range. Sage grouse inhabit the foothills and benches west and south of Scipio Reservoir.

In Cedar and Parowan Valleys there is a low density pheasant population.

The corridor passes through 27 miles of antelope habitat, mainly in the Escalante Desert area. The only wetland involved is the Clear Lake State Waterfowl Refuge which supports peak fall migration populations of waterfowl. This is also a nesting area for various water birds.

All of the corridor passes through raptor wintering areas. Bald eagles concentrate around Clear Lake Refuge and Scipio Reservoir. Golden eagles, rough-legged hawks, red-tailed hawks, some prairie falcons, and an occasional peregrine falcon winter in the Escalante Desert. Six miles of a Golden eagle nesting territory are crossed in the Escalante Desert. There is a variety of common non-game mammals, birds, reptiles and amphibians throughout the corridor. No threatened species are known to nest within the corridor.

### D.9. Fish

Carp occur in Clear Lake Refuge. Game fish occur in Willow Creek. Willow Creek and Maple Grove Spring Creek have been stocked by the Division of Wildlife Resources. All waters listed below support a sport fishery.

Fish Stocking in Waters Crossed by the West Desert Corridor

| Streams | No. Stocked/Yr. | Species | Type |
|---|---|---|---|
| Willow Creek | 1,000 | Rainbow Trout | Catchable |
| Maple Grove Spring Creek | 5,500 | Rainbow Trout | Catchable |
| | | Cutthroat Trout | Fry |

---

## D.10. Livestock

In Sevier Valley sheep graze during the winter and early spring. Cattle also graze during the early spring. The stocking rate is 15 acres per cow month. Cattle graze in the spring and some in the winter around Scipio Reservoir.

Cattle graze the desert during the winter. A few areas are grazed during the summer. The stocking rate is 9 to 37 acres per cow month. Sheep winter along the corridor near Milford. Grazing is seasonal at a rate of 5 to 9 acres per cow month.

Some cattle graze around Minersville during the winter and early spring. Grazing is seasonal at a rate of 7 to 12 acres per cow month.

Cattle and a few sheep graze where the corridor crosses the Escalante Desert. Most of the allotments are under intensive livestock grazing management and are grazed year-round. The stocking rate varies from 5 to 15 acres per cow month.

The private agricultural lands all along the corridor are used to winter livestock.

## D.11. Scenic and Esthetic Quality

### D.11.a. Setting

The setting (see Appendix C for definitions) along the West Desert corridor is placed in the three categories of rural, developed range or forest land and industrial. The rural setting is in three areas of the corridor; from Sigurd to Aurora, north of Holden, and at Milford. There is a total of approximately 24 miles of rural (agricultural setting) with approximately 133 miles in the developed range or forest land setting. Three miles of the corridor are in an industrial setting where it passes through the iron mining district near Iron Springs northwest of Cedar City.

### D.11.b. Scenic Quality

The majority of the corridor has been rated in the minimum quality category (see Appendices C and D for definitions of individual scenic categories).

From Sigurd to approximately two miles south of Scipio the corridor is rated moderate quality. From this point to approximately three miles west of Pavant Butte, the corridor was rated as having minimum quality scenery. From this point to three miles east of Clear Lake the scenery within the corridor was given a moderate quality rating. The rest of the corridor to Cedar City was rated as minimum quality.

The majority of the corridor was placed in the minimum quality scenic category because of the open and flat to rolling desert landscape, a primary vegetation of grass and desert shrubs, and a considerable amount of human disturbance. Fences, reservoirs, mining, borrow pits, power poles, the railroad and roads are easily discernible.

The approximate mileage breakdown is as follows:

| | |
|---|---|
| Unique Quality | 0 miles |
| Moderate Quality | 28 miles |
| Minimum Quality | 132 miles |

### D.11.c. Transportation Routes and Visual Areas

U. S. Highway 89 parallels the corridor from the Sigurd substation to approximately two miles north of the substation. The proposed I-70 route would also cross the corridor in this area. Highway U-256 parallels the corridor on the east, north of Aurora, for a short distance. Highway U-63 parallels the corridor on the north and enters it approximately two miles north of Scipio Lake. This highway leaves the corridor two miles south of Scipio. Interstate 15 crosses the corridor five miles south of Scipio. Highways U-26 and U-309 enter the corridor west of Holden, and Highway U-257 is within the corridor from Clear Lake to Milford. Highway U-21 enters the corridor south of Milford. The corridor ends west of Cedar City near Highway U-56.

All travel routes discussed are of regional importance except for Highway U. S. 89 and Interstate 15. These are national travel routes. All other roads and trails were of local importance and were not rated.

A breakdown of visible areas by miles as related to travel routes is as follows:

| | Foreground | Middleground | Background | Nonvisual |
|---|---|---|---|---|
| National routes | 10 miles | 12 miles | -- | -- |
| Regional routes | 55 miles | 95 miles | 31 miles | -- |
| Local and non-visual routes | -- | -- | -- | 56 miles |

---

### D.12. Recreational Facilities and Sites

Both Scipio Lake and Clear Lake are located within and close to the corridor. Ivie Creek above Scipio Lake receives heavy fishing and waterfowl hunting use. Scipio Lake itself receives no fishing as the water is drained yearly during the irrigation season. Clear Lake is a State Migratory Waterfowl Refuge managed by the Utah State Division of Wildlife Resources. One developed campground is located in the corridor. The Maple Grove Campground, a Forest Service development, receives heavy use during summer months.

Rockhounding is an important recreational activity along the proposed corridor. One rockhounding area, approximately one mile north of the Clear Lake railroad station on the road from Delta to Milford, is valuable for golden labradorite. This is the best known site for collecting golden labradorite in the western United States. Several other areas along the corridor are obsidian collection sites. One site is located approximately five miles north and then east across the railroad tracks from Black Rock, a local railroad stop. Another site is approximately 12 miles southeast of Black Rock on the eastern side of the corridor.

### D.13. Historical and Archaeological

No complete archaeological field survey has been made on this corridor; therefore, the full archaeological potential is not known.

There are no currently designated national historic sites within the corridor, and no sites are considered significant enough for nomination. There is a historical landmark known as "Pavant Butte" or Sugarloaf located approximately three miles east of Clear Lake. It can be seen for many miles in all directions. Escalante called this butte "El Cerillo."

There are several historic gold mining areas northeast and southeast of Milford. Old charcoal kilns are found in these areas.

The Escalante Trail (1776), the Gunnison-Beckwith Trail (1853-54), and the Fremont Trail (1844), enter the corridor northeast of Holden. The Fremont Trail (1844), leaves the corridor west of Holden and continues southward. The Escalante Trail and the Gunnison-Beckwith Trail traverse the corridor to Clear Lake. The Escalante Trail (1776), turns southward west of Clear Lake. It is within or parallels the corridor on the west as the trail follows the Beaver River to Milford. From Milford the trail continues southward along the western edge of the corridor and leaves it approximately 12 miles south of Milford. The trail then parallels the eastern side of the corridor until it again enters the corridor approximately one-half mile south of the Beaver County line. The trail again enters and stays within the corridor until leaving it at Iron Springs.

The Old Spanish Trail is also within the corridor for approximately three miles as it also goes through the pass between Eight Mile Hills and Three Peaks.

There are at least nine archaeological sites within and adjacent to this corridor. As with the other corridors, the Sevier-Fremont culture lived in the region from 780 (?) - 1260 A.D. Many sites can be found along the streams, lakes and valleys traversed by this corridor. There is also evidence that components of the Desert Archaic culture were present throughout the corridor. Known archaeological areas are in the vicinity of Maple Grove Campground. Other sites are within the corridor north of the town of Holden and scattered along and outward from the Beaver River. The Iron Springs area has evidence of the Parowan-Fremont culture and archaeological sites can be found.

### D.14. Minerals

#### D.14.a. Leasable Minerals

U. S. Geological Survey reports and oil company interests indicate that the entire length of this corridor has potential for oil and gas. Most of the available land is currently under lease. Although there is some exploration in the area, there is no known production.

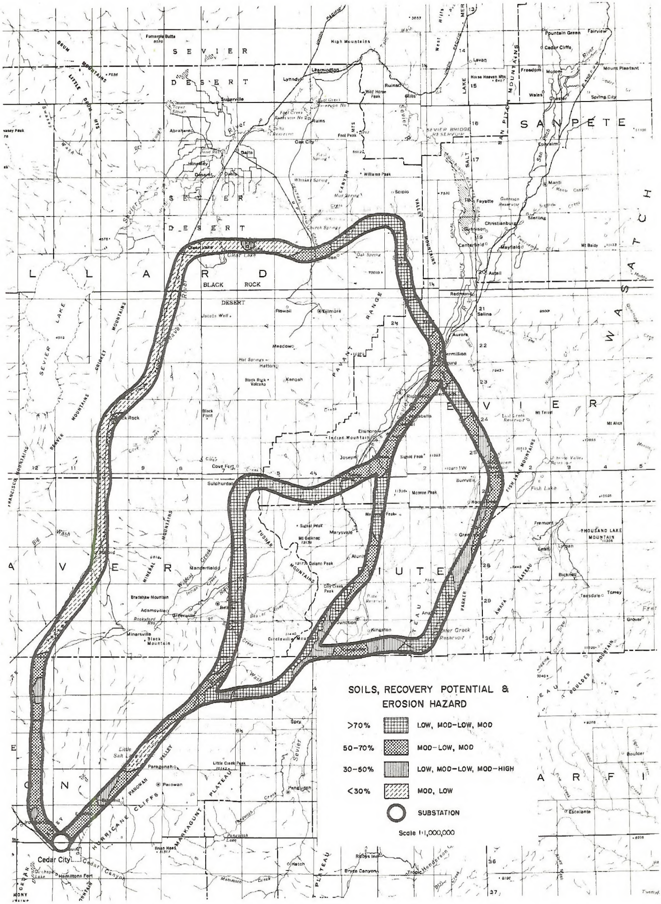
The geothermal potential in this area is somewhat better than for the other routes. Almost one-half of the corridor is either on land that is designated by USGS as having a geothermal resource potential, or close to areas where interest (as shown by lease applications) is very high.

#### D.14.b. Locatable Minerals

The existing potential for locatable minerals is minimal at best. Mining claim activity in or near the corridor appears to be limited to scattered locations for agate and other semi-precious gem material.

#### D.14.c. Salable Minerals

Because the corridor is located almost completely on unconsolidated alluvial material, it is a good potential source for gravel or borrow material. However, because of the low population of the area, only about 10 pits are located in or near the corridor.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50-70% MOD-LOW, MOD
30-50% LOW, MOD-LOW, MOD-HIGH
<30% MOD, LOW
SUBSTATION
Scale 1:1,000,000
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MILLARD
BLACK ROCK DESERT
SANPETE
SEVIER
WASATCH
BEAVER
PIUTE
IRON
GARFIELD
Delta
Clear Lake
Fillmore
Salina
Richfield
Cove Fort
Beaver
Junction
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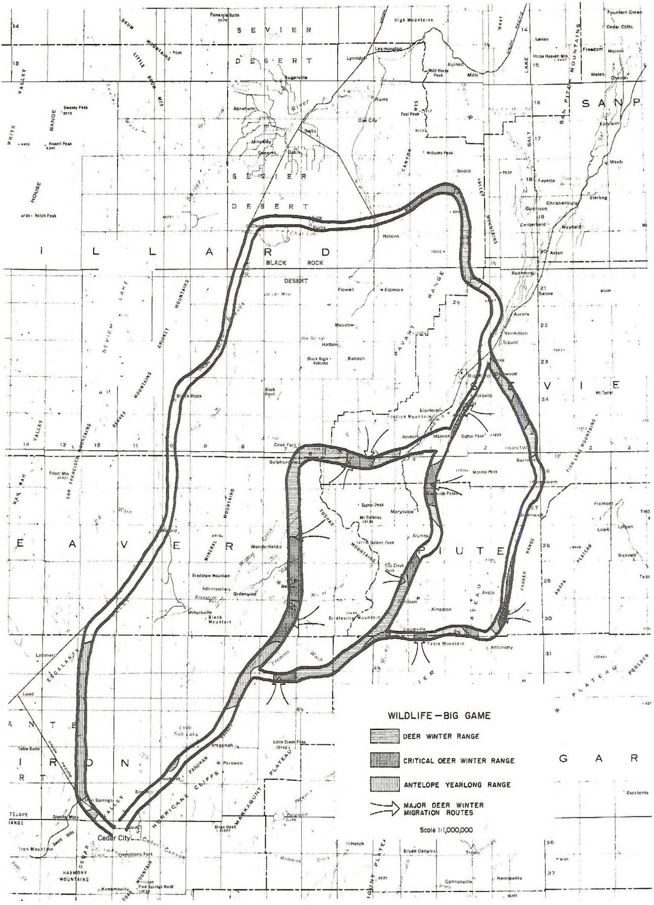
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DEER WINTER RANGE
CRITICAL DEER WINTER RANGE
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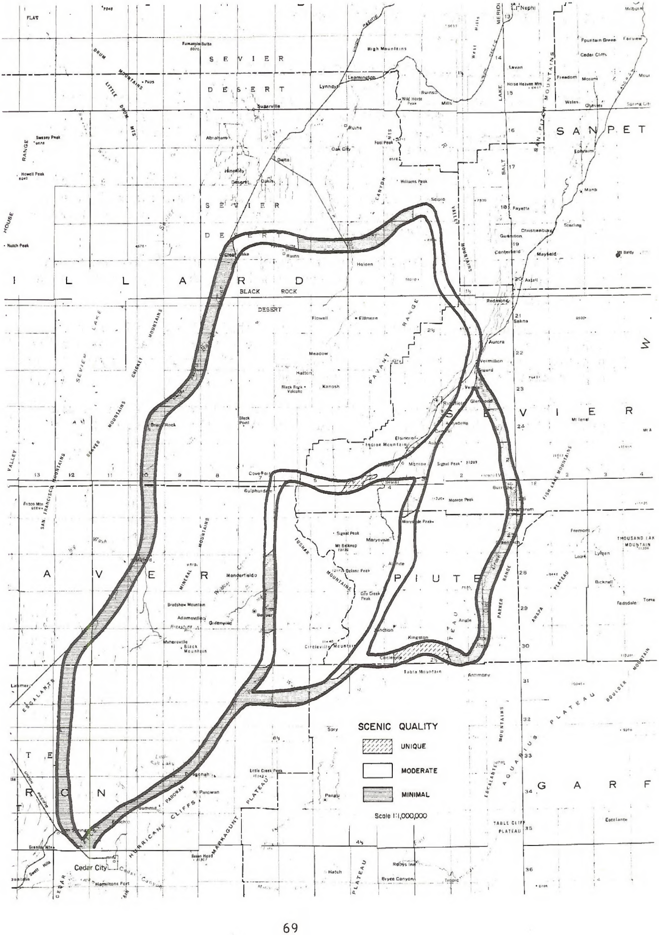
PIUTE
SEVIER
IRON
GARFIELD
SANPETE
Delta
Fillmore
Kanosh
Richfield
Monroe
Marysvale
Junction
Circleville
Antimony
Beaver
Minersville
Milford
Parowan
Paragonah
Enoch
Cedar City
Salina
Gunnison
Manti
Ephraim
TUSHAR MOUNTAINS
PAVANT RANGE
SEVIER PLATEAU
MARKAGUNT PLATEAU
HURRICANE CLIFFS
Little Salt Lake
Panguitch Lake
Bryce Canyon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SEVIER
BEAVER
PIUTE
IRON
GARFIELD
Nephi
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Fillmore
Holden
Scipio
Kanosh
Salina
Richfield
Monroe
Marysvale
Junction
Circleville
Kingston
Beaver
Milford
Minersville
Manderfield
Parowan
Paragonah
Summit
Cedar City
Hamiltons Fort
Panguitch
Hatch
Escalante
Antimony
Tabla Mountain
Bryce Canyon
Tropic
PAVANT RANGE
TUSHAR MOUNTAINS
MINERAL MOUNTAINS
CRICKET MOUNTAINS
SAN FRANCISCO MOUNTAINS
HURRICANE CLIFFS
MARKAGUNT PLATEAU
SEVIER PLATEAU
PARKER RANGE
AWAPA PLATEAU
AQUARIUS PLATEAU
BOULDER MOUNTAIN
THOUSAND LAKE MOUNTAIN
FISH LAKE MOUNTAINS
TABLE CLIFF PLATEAU
ESCALANTE MOUNTAINS
Little Salt Lake
Mt Belknap 12139
Delano Peak
City Creek Peak
Monroe Peak
Signal Peak

## E. Future Environment Without the Proposal

The conclusions of a sociological impact study of the Sigurd to Southern Utah Powerline* completed on February 1, 1974, by Southern Utah State College assistant professors Morgan J. Williams, W. Craig Jones and Wayne K. Hinton, were as follows:

E.1. The Cedar City - St. George area would continue to grow at a rate exceeding the national average because of increased desire to live in a small town, increased tourism, commitment to growth by community leaders, and potential for light industry.

E.2. The pending power shortage in the area would act as an immediate constraint to this projected growth, if the proposed powerline is not constructed.

The future environment without the proposal, then, would be a short-term period of inadequate power with resultant social hardship and political controversy and then a continuation of growth as inevitably an alternative source of power was developed.

The future environment of the actual corridor routes without the proposal would be more or less a continuation of the existing situation.

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*Copies located in the Utah State Office of the Bureau of Land Management and in the Cedar City District Office.

## PART III. ENVIRONMENTAL IMPACT OF THE PROPOSED ACTION

### A. Air Quality and Electrical Interference

Electronic interference with automobile radios would be an effect at highway and road crossings. This would create an adverse impact on a large number of people where national and regional routes cross the corridor path. However, this impact would be of short duration. See charts on Potential For Electronic Interference.

Minor amounts of dust would result from clearing, construction operations and vehicle travel on newly developed roads or existing unsurfaced access roads. The disturbance would be of short duration and would not contribute significantly to reduction of the region's air quality. The adverse impact of this effect would be minimal since it would be visible only for a limited distance and the proposed line would be passing through relatively uninhabited areas.

Air quality may be temporarily affected when wild fire hazards require disposal by burning of slash, debris or other waste materials resulting from the construction of the power line.

Transmission lines produce minute quantities of ozone ($O_3$) from corona discharge. Global background concentrations of ozone range between 0.015-0.030 parts per million (ppm). Ozone concentrations measured at Huntington Canyon, Utah, ranged from 0.02 to 0.04 ppm. 1/ Concentrations of ozone measured in the Lake Powell region of Southwestern Utah have ranged between 0.011 and 0.037 ppm. 2/ It is expected that existing background levels of ozone along the proposed corridor route of the Sigurd to Cedar City power line would not be significantly different from background levels in the areas discussed above.

The transmission line conductors are proposed to be single conductor (795 MCM-ACSR) 1.063 inch outside diameter, three phase, 20 foot phase spacing suspended from wood structures, with 28 foot ground clearance traversing terrain elevation ranging between 5,200 and 8,000 feet MSL. Approximations can be made of the ground level addition of ozone from the proposed line using the methods developed by Westinghouse and summarized in the following table. 3/ Assuming

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1/ Draft Environmental Statement, 1974
Second Unit, Huntington Canyon Generating Station
Prepared by Department of the Interior, Bureau of Reclamation
Lead Agency, May 1974

2/ Walther, E. G., M.D. Williams, and R. Cudney, 1974. Air Quality in the Lake Powell Region. In Press

3/ Westinghouse Power Systems Planning Division
Advanced Systems Technical Section
Report AST-73-886, February 28, 1973

## POTENTIAL ELECTRONIC AND VISUAL INTERFERENCE

| Corridor | Corridor Crossings of Major Highways | | | Traffic Volume (1972) in No. of cars per day. (3.2 person per car nat. average) |
|---|---|---|---|---|
| | Highway No. | No. of Times | Place | |
| Sevier Valley | U-119 | 1 | Glenwood | 625 |
| | US- 89 | 1 | So. of Marsyvale | 1190 |
| | U- 20 | 1 | Bear Valley | 340 |
| | US- 91 | 1 | So. of Beaver | 3300 |
| | | | | 5455 Total |
| Cove Fort | US- 89 | 1 | Near Sigurd | 3300 |
| | US- 89 | 1 | Near Cove | 2280 |
| | U- 4 | 1 | Clear Creek Can. | 1000 |
| | US- 91 | 1 | So. of Beaver | 3800 |
| | | | | 10380 Total |
| Grass Valley | US- 89 | 1 | Sigurd | 3300 |
| | U-119 | 1 | Glenwood | 625 |
| | U- 22 | 1 | Burrville | 325 |
| | US- 89 | 1 | So. of Circleville | 1310 |
| | US- 91 | 1 | So. of Beaver | 3300 |
| | | | | 8860 Total |
| West Desert | US- 91<br>(I-15) | 1 | So. of Scipio | 3270 |
| | U- 26 | 1 | NW of Holden | 190 |
| | U-100 | 1 | Near Clear Lake | 150 |
| | U- 21 | 1 | Near Milford | 220 |
| | U-382 | 1 | Near Lund | 75 |
| | | | | 3905 Total |

## POTENTIAL FOR ELECTRONIC INTERFERENCE

| Corridor | Population within and adjacent to corridor 1/ | Number of existing communication sites within corridor | No. of existing communication sites within 1 to 3 miles of corridor | Number national travel routes crossed | Number regional travel routes crossed | Traffic volumes | Miles of corridor parallel to nat'l routes 2/ |
|---|---|---|---|---|---|---|---|
| Sevier Valley | 9,220 | 0 | 5 | 3 | 3 | High | 70 |
| Cove Fort | 9,806 | 0 | 3 | 3 | 4 | Moderate | 74 |
| Grass Valley | 3,197 | 0 | 6 | 3 | 2 | Moderate | 67 |
| West Desert | 2,703 | 1 | 1 | 2 | 4 | Low | 12 |

1/ Population presented reflects figures for incorporated areas. Unincorporated areas and rural homes were not included because population data is not readily available for these areas and individual homes. It is safe to assume that individual homes and smaller communities will be adversely affected by electrical interference if they are located within one-half mile of any large powerline.

2/ These mileage figures are estimated on probable line placement. Mileages could change with specific line placement.

the worst case condition of maximum elevation (8,000 ft. which exists along only 4 miles of the line), maximum ozone production rate of 0.16 lb/mile/hour and foul weather conditions, the calculated level was approximately 0.032 ppm at ground level and a lateral distance of 40 ft. from the center phase. 4/ This calculated level would be approximately an order of magnitude below the expected ambient ozone concentration level. Studies by Hill et. al. with 34 plant species showed that the most sensitive plants tested received injury at approximately 0.20 ppm ozone concentration during 2 hour fumigations. 5/ There was a wide range of injury response with some species not showing injury at concentrations of up to 0.41 ppm. The predicted "worst case" conditions would be significantly below this level. The result of an intensive analytical laboratory, and field measurement program conducted under a variety of conditions indicated that gaseous effluents including ozone from 765 KV transmission lines (4 subconductor bundle using 1.165 inch conductors) do not create an adverse environmental impact. 6/ In these same studies, field tests conducted at 20 locations under a variety of meteorological conditions show no detectable ozone formation attributable to higher voltage lines. The limits of sensitivity of the measuring instruments was stated to be ±1 part per billion (ppb).

Since the calculated levels for the Sigurd to Cedar City line are based on "worst case" conditions, which include meteorological conditions expected to be of short duration, the impact of ozone production from coronal discharge is expected to be insignificant.

Estimated ozone concentration (pphm) at ground level
under varying wind speeds and weather conditions

| Wind Velocity (mph) | Weather Conditions Fair* | Foul** |
|---|---|---|
| 0.5 | 0.040 | 0.32 |
| 2.0 | 0.016 | 0.109 |
| 5.0 | 0.068 | 0.044 |

* Mean ozone production
** Maximum ozone production

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4/ Dietrich, F. M. 1974. Personal communication. Westinghouse Electric Corporation, Pittsburgh, Pa.

5/ Hill, A. C., M. R. Pack, M. Treshaw, R. J. Downs, and L. G. Transtrum, 1961, Plant injury induced by ozone. Phytopathology 51:356-363

6/ Scherer, H. N., B. J. Ware, and C. H. Shih, 1973. Gaseous effluents due to EHV transmission line corona. IEEE Journal May-June 1973: 1043-1049

## PART III. ENVIRONMENTAL IMPACT OF THE PROPOSED ACTION

### B. Geology and Topography

All four corridors cross the active seismic belt that follows the division of the basin and range province and the Colorado Plateau province. The corridors also include part of the high plateau of the Utah section of the Colorado Plateau. These plateaus are bisected by fault zones. The number of fault crossings by corridor are shown on the following chart. The four corridors are about equally vulnerable to fault activity. Pole breakage and line disruption could result from major earthquakes and/or seismic shifts in the immediate area of the transmission lines. The adverse impact of this effect could result in widespread power outages in industrial plants, business establishments and homes.

Construction of access roads, tower pads, storage and staging areas and other similar areas would require alteration of the topography along the rights-of-way. Roads and pads would require construction cuts and fill to provide level areas for vehicle travel, assemblage of material and erection of structures. The impacts from road construction and pads would be accentuated on steeper topography.

### C. Climate

Overall climate is not expected to be affected.

### D. Soil

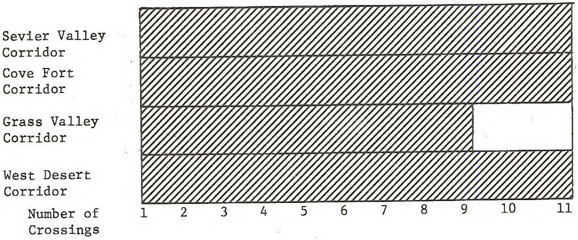
#### D.1 Soil Loss

Construction of the power line and attendant facilities would cause some loss of soils. The major impacts would result from the construction of roads, tower pads, assemblage and work areas. The loss would generally be due to blading and leveling of these areas. Some topsoil would be mixed with underlying parent material resulting in permeability and infiltration rates being reduced. Soil on roads and other sites would be lost, causing reduced productivity. Increased off-road vehicle use could cause serious impact on soils. Unrestricted clearing and blading of road areas, structure sites, staging, assemblage and work areas could represent an additional loss of soil.

#### D.2 Soil Erosion

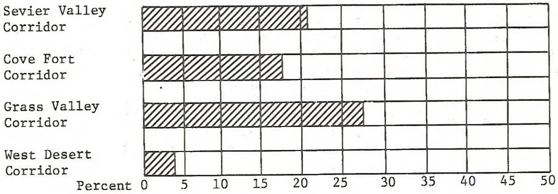
Construction of access roads, clearing and leveling for structures, right-of-way clearing, and line construction are surface

Fault Crossing by Corridor



By evaluating the topography only in terms of rougher topography offering a higher potential for surface problems, the West Desert Corridor crosses significantly less harsh features in both miles and percent of route. The following chart illustrates the percentage of rough terrain within each corridor.

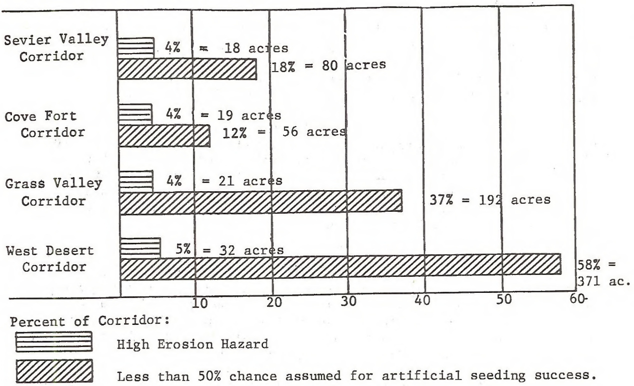
Percentage of Rough Topography in Each Corridor



disturbing activities that can result in adverse impacts of accelerated and additional soil erosion. Soils that have a high erosion hazard are particularly vulnerable to surface disturbance caused by heavy equipment and maintenance travel. Soil associations having a high erosion hazard and a low potential for recovery are areas where erosion problems are most likely to occur. The following chart partially summarizes the erosion hazard and the potential for recovery for each corridor.

The loss of soil would be minimal in those areas having high potential for recovery; the impacts would be limited because the extent of area would be small and would not cause widespread off-site erosion situations (see following table).

The Percentage of Each Corridor with a High Erosion Hazard and a Low Potential for Recovery (Based on the average of 4 acres of soil disturbance per mile)



The preceding data indicates that two corridors, the Grass Valley Corridor and West Desert Corridor, cross substantial amounts of soils which have less than an assumed 50 percent chance for artificial seeding success. Soil erosion could be more of a problem in these corridors.

Wind erosion could be substantial in the West Desert Corridor because of fine textured soils and high winds. The Sevier Valley and Cove Fort Corridors cross fewer soils which have less than 50 percent chance of artificial seeding success. Soil erosion would occur wherever vegetative cover is removed, but the impact would be the greatest on unrecoverable soils.

Use of dirt roads during wet periods of the year or following storms would cause rutting and degradation of the road surfaces. This would result in increased erosion of road beds and sedimentation to adjacent waterways.

Extremely steep topography and unstable soil conditions have been identified in the Sevier Valley Corridor east of the town of Monroe and in the steep canyon areas west of Circleville. Any construction of roads or other surface disturbance activities in these areas could create serious soil erosion problems.

### E. Vegetation

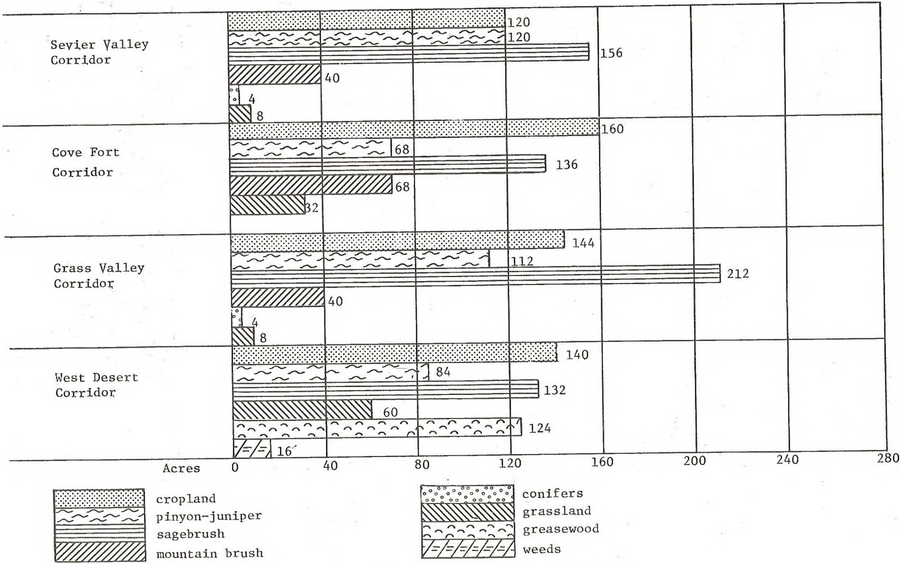
High voltage transmission line construction would require right-of-way clearing and trimming of trees and high-growing brush in all corridors. The following illustration shows major vegetative types crossed by each corridor. Acreages of each vegetative type anticipated to be affected are noted in this illustration.

Vegetation would be removed by the construction of roads, structure sites, assembly areas and other construction sites. Present plant succession would cease on all disturbed areas. Sedimentation from erosion and dust may affect additional vegetation adjacent to the disturbed areas. Rehabilitation and revegetation of disturbed areas can only approximate to former productivity and vegetative characteristics present prior to disturbance.

In forested areas, high-growing trees would be cleared or trimmed to a distance of at least 15 feet from the conductors. This is a permanent impact since the trimming operation would be required for the active life of the power line. This impact would be minor since the amount of high-growing vegetation is insignificant along all corridors. Trimming would consist of removing the highest portions of trees close to the structures and power lines.

Smaller trees and low-growing brush would be impacted less since they require less trimming. Desert shrubs and low-growing brush would be impacted less because no trimming would be required and access may not require bladed roads. However, desert shrubs are

ACRES OF VEGETATION AFFECTED WITHIN EACH CORRIDOR, BY VEGETATIVE TYPES[1/]



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1/ Acreages calculated on a four acre per line mile of vegetative disturbance.

easily killed by crushing and clearing operations and reestablishment of these desert species is difficult due to adverse soil and moisture conditions.

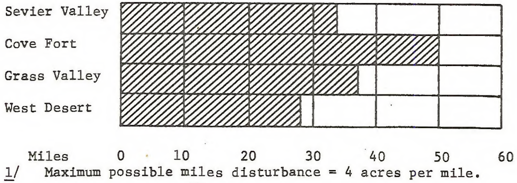
Disturbed soils resulting from clearing and construction operations are vulnerable to weed infestations. All corridors could be affected. A particular impact on the West Desert Corridor is the possible infestation by halogeton. The adverse impacts of halogeton are that it is poisonous to livestock, particularly sheep, and it does not retard erosion efficiently. The destruction of native vegetation and subsequent soil disturbance would provide suitable conditions for halogeton growth from Clear Lake to Cedar Valley. Adverse impacts of poisonous plants are generally low in the other corridors.

All of the corridors cross cropland. In general, these cropland areas are well developed with numerous roads. The most serious impact is the inconvenience of farming around transmission structures and the slight loss of crop production. The chart on the preceding page shows vegetative types affected. The maximum amount of cropland lost would be 160 acres or less on any of the corridors. Most of the lost production would be temporary and primarily limited to the construction period.

At the present time no timber sales are planned within any of the corridors. The primary timber type throughout all of the corridors is pinyon-juniper stands which have been used for posts, firewood, and Christmas trees. Right-of-way clearing for road construction and pole sites would remove a small portion of the pinyon-juniper stands from production. Acres of pinyon-juniper traversed by the corridors are illustrated on the vegetative type chart on the preceding page.

Generally, the prime value of tree species in all corridors is for watershed, wildlife, and aesthetic purposes. Only inconsequential reductions in timber values are expected. The vegetation section includes a description of amounts and types of vegetation altered. The following chart summarizes the total miles of forest land affected by each corridor.

Summary of Forest Land Affected by Corridor [1/]



1/ Maximum possible miles disturbance = 4 acres per mile.

## F. Water

Minor stream pollution is an effect from construction activities wherever the corridor crosses live streams. The impact of this effect will be limited to approximately one-day duration at each stream crossing. The number of live stream crossings varies by corridor and is shown in the Fishery Chart in this part on page 85. Equipment service sites adjacent to streams or on watersheds could add oil and gas contaminants and human wastes to streams through seepage or surface flow. Due to the small areas treated (50-60 square feet per structure), the seepage or surface flow into the stream would be insignificant. All corridors have numerous dry stream crossings. The number of dry stream crossings varies in a given area according to roughness of the terrain. The impact at such dry crossings is not considered a significant factor.

Intermittent streams may also be affected by power line construction. Disturbed soil and debris may be picked up by run-off water and deposited in reservoirs, canals and ditches. This would be a temporary impact requiring irrigation facilities be cleaned sooner than would be necessary if no disturbance had taken place. All corridors have numerous intermittent stream crossings. The number varies according to the roughness of the terrain. The impact of crossing intermittent streams is not considered to be a significant factor because of the infrequency of surface run-off and the high level of natural siltation and debris build-up.

Construction, operational or other surface disturbing activities adjacent to waterways, including intermittent streams, may cause significant but localized impacts to water quality. The blocking of drainages with loose unconsolidated fill materials and removal of ground cover adjacent to drainage channels would likely increase sediment concentrations and dissolved solids during run-off and streamflow. This impact is readily accentuated when easily eroded loose unconsolidated soil material is located in or adjacent to waterways. Disturbance to drainage bottoms may cause channelization and alteration of stream courses. Due to the relatively small areas anticipated to be disturbed in any one location, the anticipated changes in water quality would be local.

Power line maintenance needs often require some sort of vehicle access. Sediment load and turbidity could temporarily increase from disturbing the land.

The communities of Sevier, Junction and Circleville receive, via pipelines, their culinary water from developed springs which are located some 2 to 6 miles from the respective communities. The Sevier Valley Corridor would cross portions of these pipelines, but would be at least a half mile from the developed spring areas. Thus, no impacts would result.

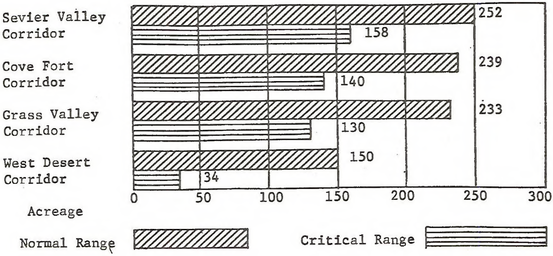
## G. Wildlife and Fish

Most of the potential impacts mentioned are quantified in the following charts. The primary effect of the power line and its attendant construction is the removal or disturbance of vegetative cover and disturbance of fishery streams. Road construction and other surface disturbing activities would reduce habitat at the rate of about four acres per line mile. On big game ranges, a certain amount of browse and forbs would be lost. The vegetation removed would not significantly affect the deer and antelope populations that inhabit this area. Where protective winter cover such as heavy sagebrush or riparian vegetation is removed, the impact on sage grouse and pheasant would be undesirable since these plants are used for food and shelter.

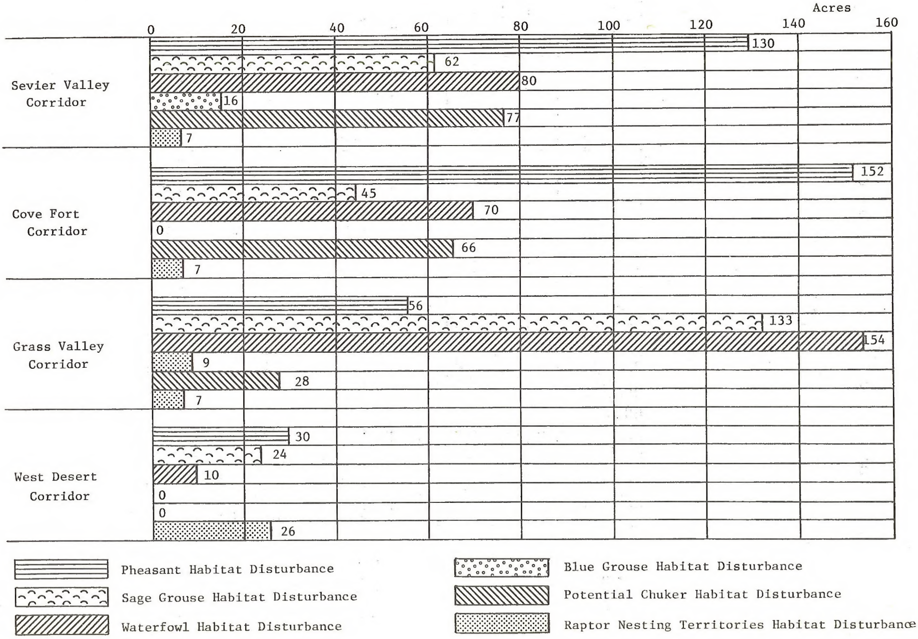
Increased human activity and surface disturbance of critical wildlife activities during certain periods of the year would be detrimental to certain wildlife species. Human intrusion is tolerated only to a certain point by almost any wild animal. The degree of tolerance varies widely between species.

Disturbance of big game wintering and fawning areas from December through April could adversely affect local populations of deer and antelope. Alteration of sage grouse strutting grounds or disturbance during the strutting period from March through April could result in the permanent lowering of the base populations. Impacts on wintering waterfowl populations could be severe if construction activities were to occur from November through February adjacent to the limited open water areas such as flowing streams.

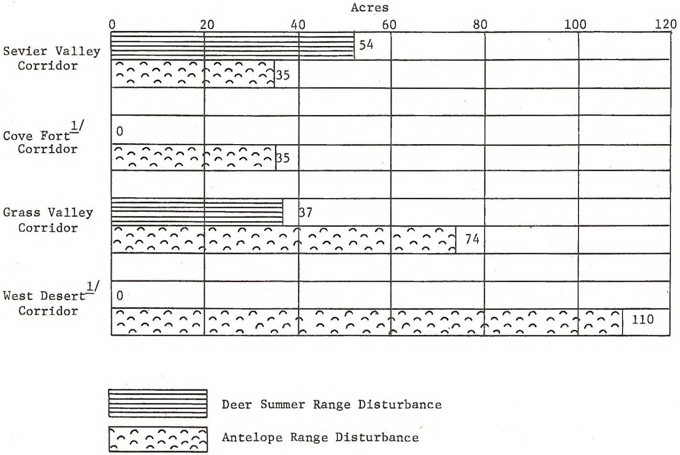
Deer Winter Range Disturbance



BIRD HABITAT DISTURBANCE



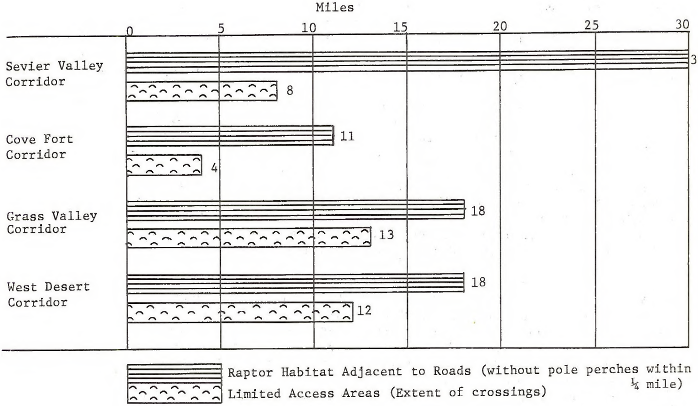
## DEER SUMMER RANGE AND ANTELOPE RANGE DISTURBANCE



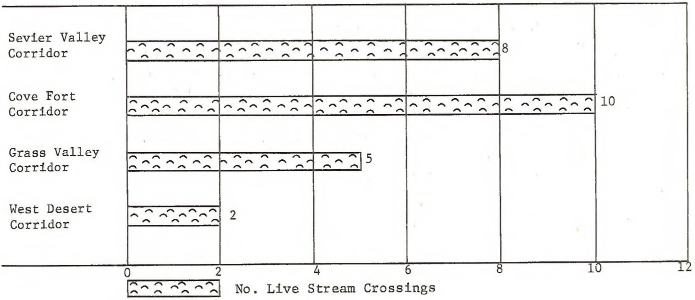
1/ Some low quality summer range does occur along Scipio Summit and through Clear Creek. These areas are more important as winter ranges and they were classified as deer winter range in the previous table.

## PART III. ENVIRONMENTAL IMPACT OF THE PROPOSED ACTION

### RAPTOR HABITAT AND LIMITED ACCESS AREAS CROSSED BY EACH CORRIDOR



### LIVE FISHERIES STREAMS



Highly sensitive areas such as prairie dog colonies, or raptor nesting sites would be adversely affected by power line construction. Cultural features placed close to these sites could cause abandonment. Transmission towers placed within one quarter mile of a road would promote indiscriminate shooting of perching birds. Otherwise, the poles could serve as perches in treeless terrain, thus benefitting raptor habitat. The clearing of brush cover and resulting invasion of secondary plant species would subsequently increase prey populations. This result would also be beneficial to raptor populations.

The value of wetland habitat would be adversely affected by removal of protective cover utilized by pheasants and waterfowl. Also, the removal of trees would lessen the value of this habitat for wading birds and raptors. The presence of lines over waterfowl concentrations and flyway areas would present a navigational hazard to bird flocks. Marshland crossed in all corridors would be less than a mile. Another possible effect on the marshes is the construction of raised pads for the poles (from one to three pads depending on the corridor selected) and raised roads or dikes. These dikes would interfere with the natural water flows through marshes.

Sediment and petroleum products from construction could cause downstream pollution at stream crossings and approaches. Coarse suspended sediments could travel downstream 200 to 400 yards, and fine suspended sediments could travel as far as 1,700 yards downstream. These suspended sediments are expected to smother aquatic organisms, resulting in lowered productivity. Spawning (gravel interstices) could also be adversely affected by the anticipated increased sedimentation. This would reduce the natural fish population and fish available for the recreationist. These problems would extend beyond the initial power line construction phase. Maintenance and recreational travel would reoccur at intervals and would result in continued siltation of streams.

Limited vehicular access areas crossed by the corridors would be opened up by construction and maintenance roads. Thus, areas of limited habitat such as small streams could become over utilized by recreationists. Other recreational uses such as snowmobiling and motorcycling could result in harassment of wildlife during stress periods.

There is no possibility of raptors being electrocuted by perching on the type of transmission structures proposed for this line as the conductors are too far apart to result in simultaneous contact by one raptor.

## PART III. ENVIRONMENTAL IMPACTS OF THE PROPOSED ACTION

### H. Livestock

In general, the adverse effects of high voltage transmission lines on livestock are minor. Line construction and maintenance would require access gates on all interconnected fences. Gates left open could result in unwanted livestock movement. Slight harassment of livestock may also occur during the construction and maintenance operations.

The possible loss of livestock forage is depicted below.

Cow Months Lost or Disturbed

| | Acres | 10 Ac/ Cow Month | 20 Ac/ Cow Month | 30 Ac/ Cow Month |
|---|---|---|---|---|
| Sevier Valley Corridor | 448 | 45 | 22 | 15 |
| Cove Fort Corridor | 464 | 46 | 23 | 15 |
| Grass Valley Corridor | 520 | 52 | 26 | 17 |
| West Desert Corridor | 640 | 64 | 32 | 21 |

Natural plant recovery would revegetate the disturbed areas, but the plant composition may not be desirable livestock forage. Most desirable forage species would be unable to compete because of livestock grazing pressure and the availability of undesirable plant seeds. This would be particularly true in the West Desert Corridor from east of Holden to Cedar City. A BLM administrative sheep trail parallels part of this corridor from south of Scipio to Black Rock. Here halogeton would immediately invade disturbed soils and retard or stop revegetation by other plant species. The resulting additional halogeton stands would be a hazard to trailing herds because of its toxic effects on livestock. Exact quantification of loss of livestock from the increase of halogeton on disturbed areas cannot be made.

It is anticipated that the power line rights-of-way would encounter cross developments and structures such as fences and watering facilities placed on the land to facilitate livestock grazing. During the construction, some alteration or removal of such developments may be required and some developments may be damaged.

## PART III. ENVIRONMENTAL IMPACT OF THE PROPOSED ACTION

### I. Scenic and Esthetic Quality

#### I.1 Setting

The following chart summarizes the setting found in each corridor. Primarily there are only three types of settings found along each corridor. The three settings are industrial, rural and developed range or forest settings.

A transmission line readily fits into the industrial setting. Normally there are other similar developments such as power and telephone lines, roads, railroads, and excavations located in the industrial setting. Scenery and visual quality are normally not an important factor here.

Developed agricultural land is the focus of the rural setting. Existing developments include scattered towns and dwelling areas, roads, croplands, fences, reservoirs, canals, and utility lines. Transmission lines are generally compatible with this type of setting. Visual conflicts are not readily apparent.

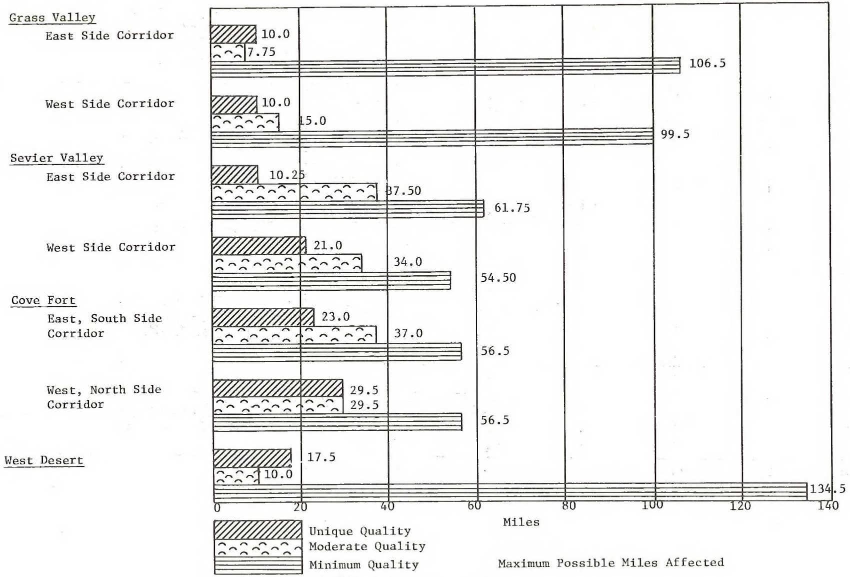
The majority of each corridor is placed in the developed range or forest category. This setting includes the range and forested areas found along the corridor. Occasional roads, trails, power and telephone lines, and livestock fences are found in this setting. The quantity and types of existing developments cause transmission line conflicts to vary within each corridor. High elevation forested areas with well hidden man-made developments would receive a great deal more impact from a new transmission line than a low sagebrush hillside with obvious developments. In addition, roads, structure sites and other areas of surface disturbance that result in the alteration of existing topography and vegetation would conflict with most natural settings. In general, transmission lines do not harmonize with the developed range or forest setting and impacts are more readily apparent.

The construction of the power line and the associated human activities can be expected to result in an increased litter and solid waste disposal problem. This impact would be anticipated to be primarily localized in and around the actual rights-of-way and access roads.

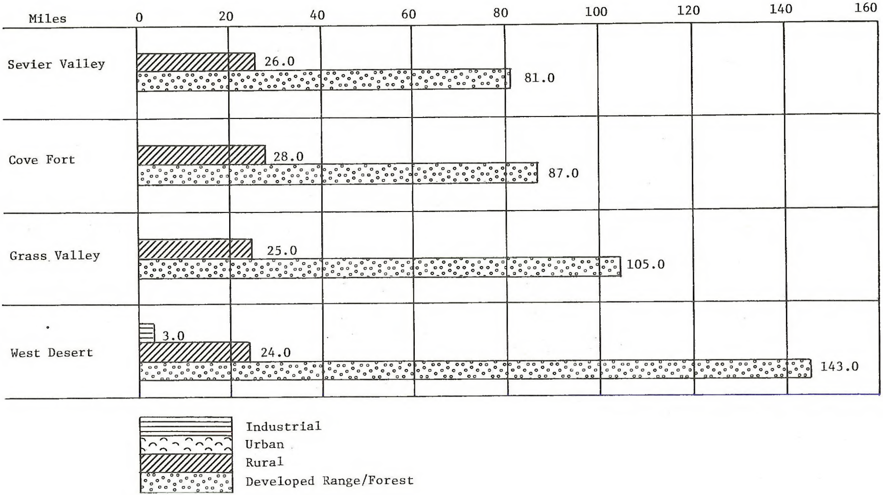
#### I.2 Scenic Quality

The land along each corridor has been rated and placed in either the minimum, the moderate, or the unique scenic categories. The

SUMMARY OF SCENIC QUALITY BY CORRIDOR



SUMMARY OF SETTING BY CORRIDOR



individual categories have been defined in Appendix C. The miles and percent of each category are presented in the table on the following page. In three corridors, scenic differences were observed within each separate corridor. In these areas, both sides of the corridor were evaluated separately.

Transmission lines are not compatible with unique quality scenery. This category has a vast variety of form, line, color and texture. Because of the variety, a transmission line and clearing may blend quickly, especially in the foreground. However, in the middle and background zones the line clearings may not be visually compatible.

Transmission lines normally do not harmonize with moderate quality scenery. However, with some variety this category may be the most compatible for a transmission line in all distance zones when silhouetting is no problem.

Transmission line developments over minimum scenic quality land add to visual pollution, but their impacts are less severe than in the other two categories. Transmission line developments are compatible with minimum scenery particularly in the background zone where distance has reduced the visual factor and towers are not silhouetted. Since minimum quality scenery lacks variety, a transmission line tower in the foreground and middleground would be adding variety that did not exist before, and visually, the towers would not blend.

### I.2.a Sevier Valley Corridor

A large portion of this corridor has been placed in the minimum and moderate scenic categories. The most impacted area would be south of Sigurd through the rural areas of Sevier Valley. There are smaller transmission lines in the area, but they do not intrude upon the view of the Tushar Mountains, Cove Mountain, and the high mountains to the west. Larger structures may detract from these scenic areas because they would be taller and seen from a greater distance.

### I.2.b Cove Fort Corridor

The existing 138 KV line is within the corridor from Cove Fort to Cedar City. Future line development would add to the scenic impact although the impact would not be as great as if no line existed.

### I.2.c Grass Valley Corridor

From Sigurd to Otter Creek Reservoir the corridor parallels an existing 230 KV transmission line running between Page and Sigurd. This line has created a visual impact on the scenery along this section of the corridor. Near Cedar City the existing 138 KV line has also created a similar visual intrusion on the southern end of the corridor. Additional development would add to this impact; however, the impact would not be as great as if no line existed.

The corridor leaves Grass Valley at Otter Creek Reservoir and crosses Table Mountain near Kingston Canyon to Circleville. Power line construction adjacent to this canyon on the south bench would create a visual impact. There are no large transmission lines through the canyon, and the impact of the first line in an unspoiled area would be high.

### I.2.d West Desert Corridor

An existing 230 KV line has created an impact on the scenery from the Sigurd substation to west of Clear Lake. The scenic quality is in the minimum category, although additional lines would add to visual impacts.

### I.3 Transportation Routes and Visual Areas

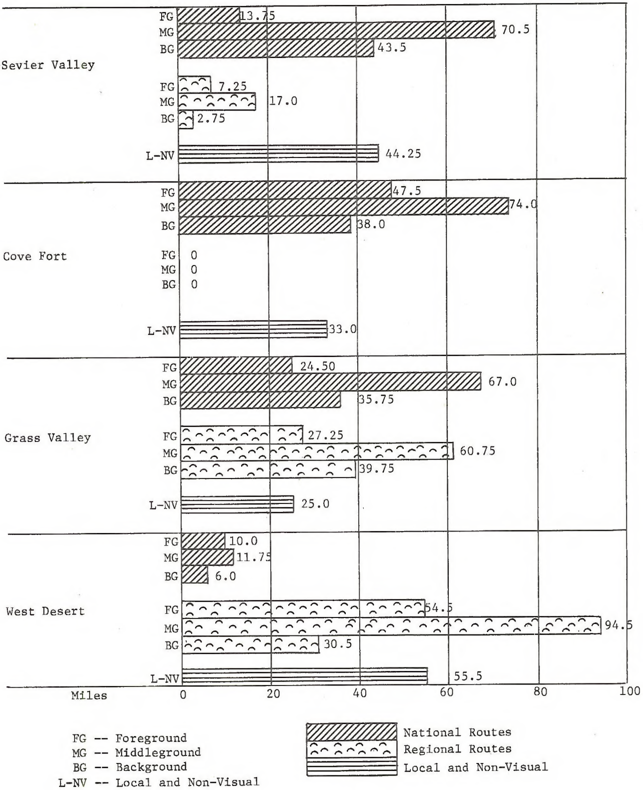
The area which is visible from major travel routes and viewing areas is a critical factor in determining the impacts of a transmission line. The personal preferences of people viewing the line is also an important factor. The chart on the following page summarizes the visual areas and their relationship to travel routes.

The nature and extent of impacts vary with specific locations. The impact of transmission lines along national travel routes is usually critical, especially where setting and scenic quality are high and free from unnatural disturbances. Transmission line impacts are high along regional routes, but usually not as great as along national travel routes.

Transmission line impacts are often severe along local travel routes.

Some of the more pertinent characteristics which make overhead transmission lines objectionable should be identified. Transmission line towers are rigid, and their straight line appearance does not readily blend with the lines and forms of the natural landscape. The foreground view zone ranges from one-quarter to one-half mile from a highway or major view area. Any towers in this viewing zone would probably be objectionable to the viewer. Likewise, skyline towers are more dominant and stand out when they are closer to the viewer. Line reflection is apparent in any of the viewing zones (foreground, middleground, and background), and the effect is about

MAXIMUM POSSIBLE VISUAL IMPACT BY CORRIDOR



the same in any of the viewing zones. Vegetative clearing and road cut and fill scars are readily visible from all viewing distances. Often, the impact is more offensive from a distance because of the long corridor effect.

#### I.3.a Sevier Valley Corridor

Visual impacts would be greatest where the corridor crosses U.S. Highway 89 due to lack of any major existing power lines and to the lack of human disturbances. Another critical area would be where Highway U-20 joins Interstate 15. The line would be unavoidably in the foreground view. The area east of Monroe is another critical area where the transmission line would be in the foreground as the structures would be within ¼ mile of town and in plain view.

#### I.3.b Cove Fort Corridor

Visual impacts would be the greatest in the view areas along the proposed route of Interstate 70 through Clear Creek, along the corridor south of Cove Fort and again where Interstate 15 joins with Highway U-20. These are areas where the power line would be seen by motorists on a major highway.

#### I.3.c Grass Valley Corridor

From Sigurd to Otter Creek Reservoir the visual impact of a line in this corridor would be alleviated because of the existing Page to Sigurd 230 KV transmission line. The greatest visual impact would be in the Kingston Canyon area because of high scenic quality. Another critical impact area is where Highway U-20 joins Interstate 15. The line would be unavoidably in the foreground view.

#### I.3.d West Desert Corridor

The visual impact of a line through this corridor would be lessened due to the existing 230 KV transmission line that passes west of Clear Lake. Impacts would be the greatest where the corridor crosses Interstate 15 north of Holden and also along the route southward from Clear Lake where the "open space" visual effect is present, and the transmission line can be seen from many miles.

### J. Recreation Facilities and Sites

Transmission lines normally reduce the quality of the sightseeing experience. This is particularly true for areas where the setting and scenic quality are rated high. Areas such as Kingston Canyon, parts of Sevier Valley, and the view areas along proposed Interstate 70 through Clear Creek are examples which would be adversely affected by transmission facilities. Access to fishing streams and reservoirs is not expected to be lessened if transmission lines were placed in areas where fishing occurs.

There is a possibility that fish populations would be affected as discussed in the "Wildlife and Fish" section. Sedimentation may result in lowered fish populations which would indirectly affect fishing success.

Access roads developed during construction may improve access for hunting, fishing, outdoor recreation vehicle use, pleasure driving, rockhounding, etc. Right-of-way clearings could be used for wildlife observation and hunting. Additional access would open more areas to off-road vehicle travel. Access roads paralleling transmission lines could be used as motorcycle trails. Trail-bike riders can travel an area impacted by power line construction.

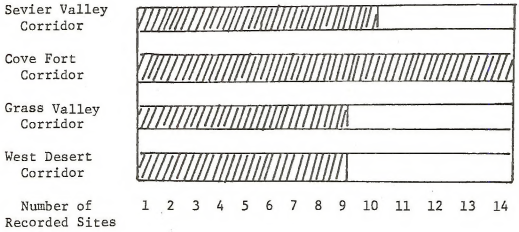
Recreational developments such as summer homes, winter-use cabins and campgrounds are often located in close proximity to quality views and scenery. The development of transmission lines near these areas would reduce their desirability and often negate future development of potential sites. Such an effect would be felt by people living in small rural communities. The city of Monroe illustrates this impact. If a power line were constructed east of Monroe in the Sevier Valley Corridor or the Cove Fort Corridor, the new recreational and home developments would be adversely affected.

### K. Historical and Archaeological

Some archaeological sites have been identified within all four corridors. Archaeological site potential is greatest at elevations below 7,000 feet, near available water and flat tillable land, or in caves. The expected impacts are proportional to the extent of these characteristics within each corridor.

The following chart provides a comparison between corridors relative to the number of known sites. It should be pointed out that data in this chart represent only the recorded sites on file at the University of Utah. These sites were recorded at random, and they are not indicative of the true archaeological picture in each corridor. They do provide the best data available.

Number of University of Utah Recorded Sites Inside the Corridors



Archaeological sites could be disturbed or destroyed by construction activity. The impact of this effect could result in the loss of scientific knowledge. The presence of transmission lines close to archaeological sites would reduce their value for interpretation. Additional access would increase potential for vandalism of any sites found in the general area of the corridor.

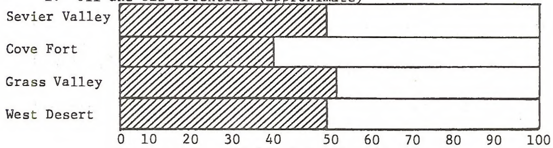
Known locations of historical sites have been identified in or adjacent to the Grass Valley Corridor, the Cove Fort Corridor, and the West Desert Corridor. The scenic value of historical sites would be reduced by power transmission lines. This impact would be felt when interpreting an historical setting, and when the feeling of the historical era is being conveyed. Many of the historical areas are crossed with existing power lines, roads, and other cultural developments. The introduction of another power line would not create the magnitude of impact that a line traveling through an undeveloped area would create.

## L. Minerals

The relative amount of land in each corridor with a potential mineral value is shown in the following graphs:

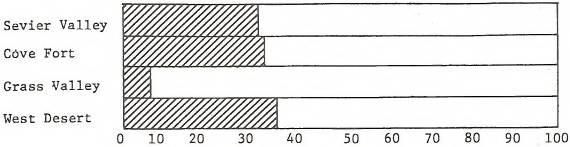
## PART III. ENVIRONMENTAL IMPACT OF THE PROPOSED ACTION

1. Oil and Gas Potential (approximate)



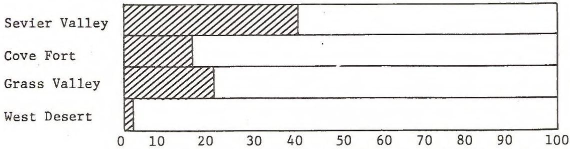
Percent of available federal land presently under lease for oil and gas.

2. Geothermal Steam Potential



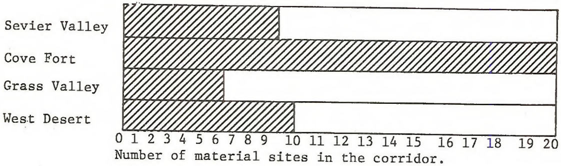
Percent of land in geothermal resource area.

3. Locatable Mineral Potential



Percent of lands in corridor with locatable mineral potential.

### 4. Salable Mineral Potential



The proposed action would have minimal, if any, effect on mineral values. The only possible adverse impact would occur if the power line route should cross or interfere with any existing or potential mining or drilling operations.

Although the power line is not expected to affect existing mineral operations, the line could limit or conflict with potential sand and gravel extraction areas and with the exploration and development of potential geothermal resource areas. The significance and extent of such impacts is difficult to assess due to the limited knowledge of the mineral or geothermal potential.

### M. Fire Control

It is not anticipated that there would be any significant impacts on fire control operations resulting from a power line in any corridor.

### N. Sociological Impacts

The availability of additional electrical energy would affect communities and individuals in California-Pacific's service area.

The communities of Cedar City and St. George have experienced economic growth in recent years in excess of the national average growth rate. The most important factors contributing to this growth include the following: increased desire to live in a small town, rural environment; increased tourism; travel and recreation; shared commitment by community leaders for growth; and the potential introduction of light industry.

Evidence indicates that both communities would continue to grow during the next 20 years. Presently continued economic growth is dependent upon an additional supply of electrical energy. Without additional electrical energy, economic growth would be stifled.

The central characteristic of economic growth in both St. George and Cedar City is expected to be toward urbanization. If recent growth trends continue, there would be increased specialization, increased nonagricultural employment, and increased demands for public and medical services in both communities. The communities would exhibit greater social mobility both across socio-economic class lines and in and out of the communities.

Accelerated growth of smaller communities generally results in changes of the traditional values and lifestyles of these communities. Tensions may develop between the established community which may seek to pressure the traditional values and lifestyles and those who seek different or conflicting values.

St. George, Cedar City and to a lesser extent the smaller communities that would receive additional electrical energy would probably experience greater social, racial, and religious diversity somewhat in proportion to the extent to which they experience growth.

The construction of a transmission line would not affect the social structure of the small communities, farms and ranches located within the corridor. The effects on small communities and farms would be physical in nature, and these impacts have been identified previously in the statement.

### O. Public Safety

Transmission lines are inherently hazardous because they transmit high voltage electrical current. However, transmission lines are designed to meet National Safety Code standards. These standards are designed to reduce safety hazards. Therefore, it would take an unusual combination of circumstances for a transmission line to be a hazard to people, aircraft or trucks.

There may be traffic hazards during construction. Use of public roads by construction equipment and vehicles, as well as trailer trucks hauling transmission poles, could create a potential safety hazard. All the corridors have similar public safety impacts.

### P. Transportation

Roads built for power line construction and maintenance would not help meet transportation objectives. There are no known public access roads planned within the corridors except for major Federal highways.

At the present stage of highway development, three alternatives are under consideration for Interstate Route 70. One of these alternative alignments would closely parallel the proposed Sevier Valley and Cove Fort transmission line corridors. The danger of a conflict between the proposed highway and the proposed transmission line is remote due to the close liaison among the Utah State Department of Highways, Utah Power & Light Company, Bureau of Land Management and Forest Service.

In some instances, hunter and other user access could be improved with these roads. All the identified corridors have areas with existing transmission lines. In these areas, development of additional roads would not appreciably increase the opportunity for access. In areas where there are no electric transmission facilities or roads the opportunity for increased access does exist.

## PART IV. MITIGATING MEASURES INCLUDED IN THE PROPOSED ACTION

### General Mitigating Measures

If a decision is made to construct the proposed line, most of the identified impacts would be mitigated by means of the following:

Specific measures to protect the environment in regard to design, construction, and maintenance of the line would be incorporated as stipulations to Bureau of Land Management and Forest Service right-of-way grants. Bureau of Land Management and Forest Service personnel would monitor construction of the line to assure compliance with these stipulations.

Preconstruction seminars would be held with representatives from Utah Power & Light Co., their contractors, the Bureau of Land Management, and the Forest Service. At these seminars, environmentally sensitive areas would be identified and procedures and stipulations to protect the environment explained. In addition, two publications, Environmental Guidelines, (Environmental Committee of the Western Systems Coordinating Council, 1971), and Environmental Criteria For Electric Transmission Systems (U.S. Government, 1970), would be reviewed to assure complete understanding and compliance therewith by Utah Power & Light Co.

### Specific Mitigation Measures

The BLM would require and/or the Company has committed itself to the following specific mitigating measures as cited below if the proposed project is approved for construction:

#### A. Air Quality and Electronic Interference

The BLM would require that roads would be sprayed with water in areas where heavy use of dirt roads causes a dust problem.

#### B. Soil

The applicant has committed itself to the following:

1. Travel would be permitted only on existing roads or approved construction roads. No off-road travel would be allowed outside the right-of-way.

2. Existing roads would be used wherever feasible. Locations of new roads would be specifically approved by the appropriate authorized officer. Roads would be constructed with the minimum

possible clearing and would be no wider than necessary for use by the specific equipment needed.

3. In areas of moderate sideslope, road restoration would be accomplished in such a manner that the equipment doing the work would not disturb the area adjacent to the road. On steep slopes, the fill material would be replaced and the cut bank sculptured to approximately the original slope and topography. All restored areas would be water barred and reseeded. Water bars would be added at a 45 degree angle at 100 foot intervals on roads with slopes of less than 10 percent and at 50 foot intervals on roads with slopes in excess of 10 percent gradient. These stipulations would reduce surface disturbance and, coupled with restoration requirements, would reduce soil loss of the area.

4. All used oil or other petroleum products would be hauled away. Release of crankcase oil, etc., on the ground would not be permitted.

The BLM would require the following:

1. Scalping of topsoil would not be allowed, outside roads and structure sites.

2. Due to the extremely steep topography and in order to prevent unacceptable erosion problems, no roads would be built within a half-mile strip immediately east of Monroe. Construction would be by helicopter in this area.

3. Dirt roads would not be used at times when such use would cause severe rutting.

4. The company would comply with the applicable state and federal laws and regulations concerning use of poisonous substances, including insecticides, herbicides, fungicides, rodenticides and other similar substances. Prior to the use of such substances on or near the right-of-way, the Company would obtain from the authorized officer approval of a written plan for such use. The plan would state type and quantity of material to be used, the pest to be controlled, method of application and such other information as the authorized officer may require. All use of such substances on or near the right-of-way would be in accordance with the approved plan. If use of a poison is prohibited by the Secretary of the Interior or Agriculture, it would not be used. If use of a poison is limited by the Secretary of the Interior or Agriculture, it would be used only in accordance with that limitation.

## PART IV. MITIGATING MEASURES INCLUDED IN THE PROPOSED ACTION

The Forest Service would require the following:

No roads would be constructed across the three steep canyons west of Circleville.

### C. Vegetation

The applicant has committed itself to the following:

1. No vegetation would be removed that does not seriously interfere with construction and maintenance of the line.

2. To the fullest extent possible, brush, timber, and other wood products would be disposed of by chipping or shredding. After reduction in this manner the materials would be dispersed to serve as mulch rather than burned.

The BLM would require the following:

1. Brush blades would be used instead of dirt blades in clearing operations where such use would preserve the natural grass and low brush cover.

2. In areas where the authorized officer deems necessary, reseeding would be required. Reseeding would be of native plant species determined by the authorized officer of the BLM or Forest Service to have a high success probability. Due to variable climatic conditions from year to year, reseeding efforts can fail. If re-vegetation rehabilitation fails to establish in three years, the Company would be required to re-seed the previously treated area.

### D. Water

The applicant has committed itself to the following:

1. There would be no pushing of soil into stream beds.

2. All used oil or other petroleum products would be hauled away to a sanitary land fill meeting state and federal standards. There would be no release of crankcase oil, etc., into streams.

3. Roads would cross drainage channels at right angles and level with the stream gradient.

The BLM would require the following:

1. Drainage channels would not be blocked or changed.

2. Portable chemical toilets would be utilized during all phases of construction. Wastes would be removed to an approved

municipal sewer treatment system.

3. No storage and construction camps will be permitted within the right-of-way.

## E. Wildlife

The BLM would require the following:

1. Where the transmission lines would be routed through any critical areas, i.e., big game wintering areas, sage grouse strutting ground and/or waterfowl wintering areas, construction would be confined to nonsensitive periods. The sensitive periods are:

Big Game Habitat - December through April
Sage Grouse Strutting Ground - March and April
Waterfowl Habitat - November through February

Refinements of these time periods would be determined by the appropriate District Manager and Forest Ranger.

2. In the sensitive wildlife areas mentioned above, where access is currently limited, construction roads would be closed and restored as close as practicable to original conditions upon completion of the line.

3. Structures would be designed in such a fashion that it would be impossible for raptors to be electrocuted by perching on them.

The Company has committed itself to the following:

1. Construction workers would not be permitted to carry firearms on the project. Violators of any state or federal law protecting wildlife would be reported.

## F. Fish

Previous stipulations listed to protect soil and water would be adequate to prevent adverse impacts on fish. Minor intrusions on live streams and short duration of activities at stream crossings negate the possible loss of bottom organisms in the streams.

## G. Livestock

The BLM would require the following:

Disturbance of range improvements such as fences, watering facilities, etc., encountered during the construction and maintenance of the right-of-way would be kept to an absolute minimum. The Company would be required to immediately restore any damaged improvements to at least their former state. Functional use of these improvements would be maintained at all times. When necessary to pass through a fence line the fence would be braced on both sides of the passageway prior to cutting of the fence. Four-inch timbers or larger would be used for bracing. A gate acceptable to the authorized officer would be installed in the gate opening and kept closed when not in actual use. Where a permanent road is to be constructed or maintained, cattleguards would be placed at all fence crossings.

### H. Scenic and Esthetic Quality

The BLM would require:

1. Wherever possible, the following would be avoided to reduce visual impact of the line:

    a. Ridgetops.
    b. High points in a particular area.
    c. Areas where the line would be skylined.
    d. Long views of lines coming down hillsides adjacent to highways.
    e. Crossing highways at high points in the road where towers can be seen from a great distance.

2. General cleanup would be done continually throughout the duration of the project to prevent littering.

The applicant has committed itself to the following:

1. Leveling at the structure site would be limited to the crane pad.

2. All non-combustible waste such as conductor, ceramic, or metal scraps would be collected and hauled to an authorized dump.

### I. Historical and Archaeological

The BLM would require the following:

Impacts upon all cultural resources would be avoided. Prior to construction, the Company would complete a survey and inventory of archaeological, paleontological, and historical values within the area to be occupied by the right-of-way and the access roads. This survey would be performed by a BLM approved archaeologist. Results of this survey would be provided to the authorized officer. Any cultural resources which cannot be avoided would be evaluated for: their eligibility for nomination to the National Register of Historic Places (106 criteria set forth in 36 CFR 800 - appropriate action to follow), line relocation and site avoidance, salvage, testing or other as required by Executive Order 11593.

### J. Fire Control

The applicant has committed itself to the following:

1. Burning would be done only in conformance with Utah Air Quality Standards and burning permit requirements.

2. All slash would be mulched, removed, or burned to prevent accumulation which could pose a fire hazard.

### K. Public Safety

The applicant agrees that:

1. The powerline would conform to all federal and state regulations pertaining to safety. Specific state and federal regulations which would apply to the proposed action are as follows:

   a. 1953 Utah Code Annotated as Amended Section 27-2-7 (22)(A) - Regulations for the Control and Protection of State Highway Rights-of-Way, Protection of Traffic During Construction, p. 16.

   b. Construction safety standards - Subpart V of Department of Labor Regulations (Part I), and Bureau of Reclamation Supplement (Part II) Section 22 - Transmission Line Construction.

   c. All permanent access roads would be constructed to standards as set forth in BLM Manual 9113. Signing of roads would conform to BLM Manual 9132 and the Utah State Manual for Construction and Maintenance Traffic Control.

## PART IV. MITIGATING MEASURES INCLUDED IN THE PROPOSED ACTION

Based on the Company's commitments and the BLM additional requirements, a sample set of stipulations covering these mitigating measures is included as Appendix E.

# PART V. ADVERSE EFFECTS WHICH CANNOT BE AVOIDED SHOULD THE PROPOSAL BE IMPLEMENTED

## A. Air Quality and Electronic Interference

There are no unavoidable adverse impacts to air quality. Wherever the transmission line crosses roads, it would cause interference with automobile radio reception. There would be four to six highways crossed, depending upon the corridor selected.

## B. Geology and Topography

The line and poles cannot be constructed to withstand breakage in the event of major earthquakes and/or seismic shifts. Power outages from this impact cannot be mitigated beyond the standard protection afforded through interties with adjacent systems. (See Appendix E for stipulations pertaining to mitigation of soil and topographic disturbance.)

## C. Soil and Vegetation

Soil and vegetative disturbance would result from construction activities including access roads, preparation of structure sites, line construction and clearing operations in general. The impact of these facilities and activities on soils and vegetation cannot be eliminated. Some areas of high potential can be reseeded, but if seed is planted in a drought period, the reseeding effort could fail. A failure would result in a lag of 10-12 years for reestablishment of native species on the site. The development of new roads and trails would encourage off-road vehicle use. This could have an unavoidable impact on vegetation and soil conditions in some areas. Although roads may be closed, use may continue. The total amount of soil and vegetative disturbance cannot be quantified.

## D. Water

All adverse impacts on water resources can be mitigated with the possible exception of minor sediment problems caused by equipment fording streams. Quantification of sedimentation cannot be made; however, it would be of short duration under normal construction operations.

## E. Wildlife

There would be disturbance to wildlife populations during construction, maintenance, and as a result of public use of access roads which cannot be avoided. The charts on the following pages illustrate the probable major unavoidable impacts for each corridor.

## PART V. ADVERSE EFFECTS WHICH CANNOT BE AVOIDED SHOULD THE PROPOSAL BE IMPLEMENTED

In the Sevier Valley Corridor the major concerns are the unavoidable impacts on marshlands and migratory waterfowl in the Glenwood Bottoms and Heppler Pond areas. This corridor ranks second in the amount of deer winter range that probably could not be revegetated by reseeding. The placement of transmission structures near road crossings would provide potential perches for raptors thus making easy targets for the indiscriminate shooter. However, this corridor has the fewest number of road crossings of the four corridors.

The Cove Fort Corridor has the greatest number of road crossings, thereby creating the greatest potential for indiscriminate raptor killings. This corridor also crosses the Glenwood Bottoms-Heppler Pond areas. Most of the disturbed deer winter range would respond to reseeding.

The Grass Valley Corridor is the second longest corridor. This corridor has the highest potential for deer winter range disturbance. Also this corridor crosses the greatest amount of limited access terrain.

The West Desert Corridor is located in an area with the highest raptor population. This increases the potential of raptor killing on structures used as perches by the birds.

In addition, the Clear Lake State Waterfowl Refuge would be crossed in the West Desert Corridor.

In all corridors, there would be some loss of antelope, sage grouse and pheasant habitat. Losses would be minimal and cannot be quantified.

### F. Livestock

There would be a disturbance of livestock populations during construction, maintenance, and public use which could not be avoided.

Following is a summary showing the relative residual impacts of the various corridor alternatives:

## PART V. ADVERSE EFFECTS WHICH CANNOT BE AVOIDED SHOULD THE PROPOSAL BE IMPLEMENTED

### SUMMARY CHART OF RESIDUAL IMPACTS

| | Grass Valley | Sevier | Cove Fort | West Desert |
|---|---|---|---|---|
| Visual Pollution | 4M | 2M | 3M | 1M |
| Soil erosion | 3L | 2L | 1L | 4L |
| Deer Winter Range Destruction | 4L | 3L | 2L | 1L |
| Wetland Disturbance | 1L | 3M | 3M | 2L |
| Raptor Disturbance | 2M | 1M | 4M | 3M |
| Limited Access Terrain Crossed | 3L | 3L | 1L | 1L |
| AUM Loss | 3L | 2L | 1L | 4L |

The ratings 1-4 are relative ratings of the least impact to the greatest impact for each category.

The L (low) designation refers to an impact that is discernible, but not significant or controversial.

The M (moderate) designation refers to an impact that is definite, and of some concern, but is not significant or controversial.

The H (high) designation refers to an impact that is significant and controversial.

The table below estimates the disturbed acreage in each corridor that could not be recovered by presently known reseeding methods.

| Corridor | Disturbed Acres | Cow/Month Loss [1/] |
|---|---|---|
| Sevier Valley | 80 | 8 |
| Cove Fort | 52 | 5 |
| Grass Valley | 192 | 19 |
| West Desert | 372 | 37 |

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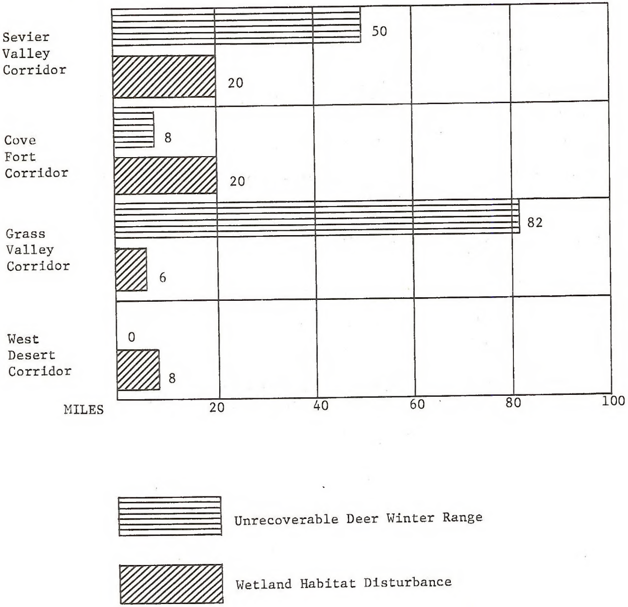
[1/] Cow/month loss was calculated using 10 acres per cow month.

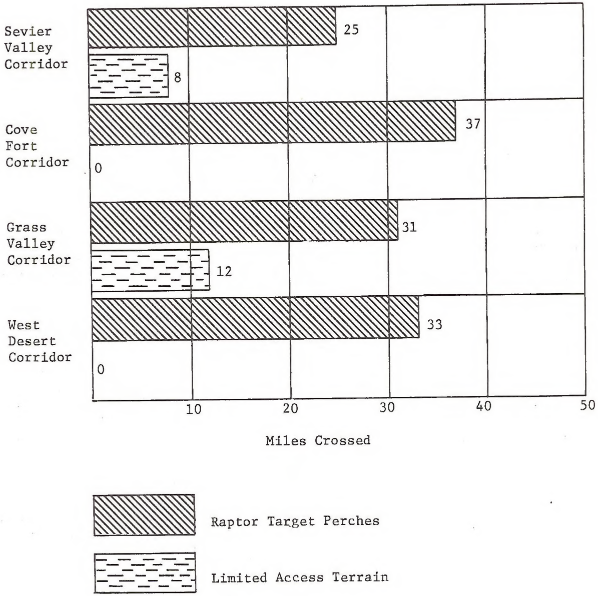
## PART V. ADVERSE EFFECTS WHICH CANNOT BE AVOIDED SHOULD THE PROPOSAL BE IMPLEMENTED

### UNAVOIDABLE IMPACTS ON DEER WINTER RANGE AND WETLAND HABITAT (IN MILES)



## PART V. ADVERSE EFFECTS WHICH CANNOT BE AVOIDED SHOULD THE PROPOSAL BE IMPLEMENTED

### UNAVOIDABLE RAPTOR TARGET PERCHES AND LIMITED ACCESS TERRAIN AREAS, IN MILES



The anticipated halogeton invasion along most of the West Desert Corridor from Holden to Cedar City would be unavoidable as this toxic plant invades disturbed soil areas and dominates the vegetative recovery. Additional deaths to livestock may occur because of an increase in density of this poisonous plant.

### G. Scenic and Esthetic Quality

Visual impacts created by the presence of transmission structures, transmission lines, and crossroads cannot be completely avoided. Visual impacts are a value judgment and cannot be quantified. No highly scenic or unique areas would be destroyed by the proposal.

### H. Historical and Archaeological

Specific unavoidable adverse impacts cannot be defined without the necessary field investigations in the impact areas of the proposed action.

Once an archaeological site has been excavated and salvaged, scientific and historic values are lost with the removal of the artifacts. Also, the location of power line facilities near a historical or archaeological site reduces the quality of the experience of visiting such a site.

### I. Sociological Impacts

Since no mitigating measures have been identified, the sociological impacts described in the previous environmental impacts section cannot be avoided should additional power become available in California-Pacific's service area. These impacts cannot be quantified.

Local community leaders and indirectly, residents of these communities through the elective process, are committed to economic growth. Local community leaders, particularly in Cedar City and St. George, perceive growth as basically good. As a result, they plan for and anticipate desirable growth. Thus, in reality, the severity of unavoidable social impact is a function of the individual community commitments to growth and the type and amount of growth allowed by individual communities. The tension created by diversified lifestyles, therefore, is an impact which cannot be avoided.

Small unavoidable cropland losses would occur because of the inability of farm equipment to work immediately adjacent to transmission lines. Losses would be less than ½ acre per farm. It would not significantly affect the economic income or value of the farm unit.

## PART VI. RELATIONSHIP BETWEEN LOCAL SHORT TERM USES OF MAN'S ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG TERM PRODUCTIVITY

The short term use of any of the identified corridors would result in a long term loss of productivity in the physical sense. Transmission lines, once constructed, have seldom been abandoned and removed. There have not been any technological innovations which make existing lines obsolete, and often, as in this particular instance, existing lines used in conjunction with new lines help improve the reliability of the existing electrical system. If a new line is constructed over any of the identified routes, southwestern Utah would be supplied by two transmission lines rather than a radial line (multiple line on one set of towers). Therefore if one line broke down, power would still flow into the area.

Portions of all the corridors contain electric transmission or distribution lines. These portions of the corridors are environmentally impacted. The maintenance of barren soil around the base of transmission towers removes small amounts of vegetation. However, when the cumulative impact is considered, the vegetation loss from this source may be considerable. The same is true for potential soil erosion problems, and the loss of critical wildlife habitat.

Regarding critical winter deer range, each new transmission line removes or disturbs another three to five acres per line mile of already minimal habitat. The cumulative losses associated with this resource could be particularly detrimental in the long run. As natural habitat is replaced by man-made structures, many wildlife species are forced to relocate in other areas. Additional transmission lines would also detract from the aesthetic values found along each of the routes.

As previously indicated, transmission lines have seldom been abandoned and removed. They normally are upgraded. If future events make it possible to dismantle the line, the area would not regain its original productivity. Some scars caused by heavy equipment would never heal due to the exposure of subsoils that are incapable of supporting vegetation. Even with reclamation practices, there would be scars. These scars would result in a long term loss of productivity.

## PART VII. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES WHICH WOULD BE INVOLVED IN THE PROPOSED ACTION SHOULD IT BE IMPLEMENTED

There are few resources that are irreversibly committed by the construction of a transmission line. It has been pointed out that transmission lines are seldom removed and some long lasting effects can be expected. Regardless of where the proposed line is constructed, there will be a long term loss of scenic values.

Supplying power to communities in southern Utah and supporting their continued growth would have a long term sociological impact. Growth trends towards urbanization, non-agricultural employment and increasing demand for public services would continue, and in the long term, change the social character of the communities. However, an increasing power supply is not the only reason for these social changes.

Since the proposed transmission line is considered to be a permanent facility, the construction materials used would necessarily be considered irretrievable. The scope and volume of these construction materials would involve in excess of 1370 poles, 2700 cross arms and braces, 360 miles of conductor, 2000 insulators and a proportionate amount of associated hardware items.

Motor fuel consumed in the construction process is also irretrievable. Conventional equipment required in the construction of the proposed transmission line would include 2 diesel caterpillars, 2 diesel cranes, 2 diesel semi-trucks, 16 gasoline pickups and 1 gasoline digger. Considering a normal period of construction, in excess of 100,000 gallons of fuel would be consumed.

## PART VIII. ALTERNATIVES TO THE PROPOSED ACTION

Alternative transmission line corridors were described and the effects of transmission line construction were evaluated in the previous sections. This section describes other alternatives to the proposal. Analysis of the additional power needs and method of meeting these needs requires consideration of many factors other than environmental factors.

### A. No Action Alternative

The increasing demand for electrical power in California-Pacific's service area requires the company to acquire additional power supplies by 1975. The existing situation was explained in detail in the opening section of this statement.

The full impacts of "no action" or not allowing additional transmission facilities to be constructed into California-Pacific's service area would be felt in Cedar City and St. George. A study entitled Sociological Impact Study of the Sigurd to Southern Utah Powerline indicates that power demands by the summer of 1975 may increase as much as 50 percent over existing usage in St. George alone. The projected increases in Cedar City's power demands are not quite as dramatic, but they are just as critical. The study further indicates that uncertainty about future power supplies could act as an immediate constraint on growth in both communities. The "no action" alternative would result in serious socio-economic environmental impacts. Economic growth would be stifled, out migration of young people would increase, employment opportunities would be limited and, in general, the community growth would cease if additional power is not made available. Other environmental impacts, as discussed for the alternative transmission corridors, would not occur under the "no action" alternative.

### B. Other Alternative Corridors

The only practical alternative route is to parallel the existing 500 KV Navajo-McCullough line from the Glen Canyon area to the St. George area. This alternative route was investigated before and during preparation of this environmental statement. This route, while having some apparent environmental advantages, does have some serious drawbacks.

Considerable planning for a line along this route has been done by various utilities and governmental agencies. California-Pacific Utilities and other organizations have been involved in this planning for the past several years. Advocates, other than California-Pacific, for a line along this route have since lost interest. The cost of a 345 KV line has been estimated to be in excess of $15 million with the necessary substations. Obviously, a small utility company such as California-Pacific would have difficulty constructing such a line without the support of a larger utility company. Utah Power and Light has gone on record at public meetings as opposing this route. The other two participants with a line of this size are Nevada Power Company and the City of St. George. These two latter organizations are involved in a proposed powerplant near St. George. They are not seriously interested in constructing a line from Glen Canyon to St. George at this time.

If a power plant were to be built near St. George to service the St. George and Las Vegas areas, there would have to be a tie linking the power plant to Nevada Power Company, Glen Canyon, and Utah Power and Light. This would aid in stabilizing the proposed plant or allow the transmission of excess energy to other service areas. The time frame involved is unclear at this time, however, a line would probably be constructed along this route within 10 years after the proposed plant is brought on line. Within this time period the same social impacts as the "No Action" alternative would occur. Should a line be constructed, overall anticipated impacts would be similar to those discussed in Section III. The degree of impact would depend upon characteristics and environment affected.

### C. Proposed Warner Valley Power Plant

Many of the power problems of California-Pacific's area stem from the inadequacies of the existing 138 KV system. The system is no longer large enough to handle present load requirements. Much of the problem is located in the St. George area. The probable future power needs of the St. George-Las Vegas area have prompted power companies to look to a possible coal-fired generating plant in the St. George area.

Supplying the necessary power to California-Pacific's service area from this source does not appear feasible. Additional electrical power is needed by 1975. Power from this plant would not be available for at least five to ten years. Planning for this proposal is just underway. Collection of background information for the environmental impact statement for this project is just beginning. Considering these facts, it is doubtful that this power plant would supply electrical energy to southwestern Utah for at least five years. Again, the social impacts would be the same as those discussed for the "no action" alternative.

### D. On-site Generation

If a new transmission line is not constructed, the only other way of supplying additional power to the Cedar City and St. George areas would be the addition of central station units. Coal-fired steam units could not be built in time and would be very small and expensive. The only system that could be installed in the preferred time frame would be small diesel engines or oil burning turbines. Fuel costs alone for supplemental generation would approximate the total cost of energy purchased from Utah Power and Light under the present rate schedule for high voltage delivery. Fuel availability may also represent an additional barrier to development of on-site generation.

The environmental impacts of on-site generation cannot be stated with any degree of accuracy. This type of electrical power generation would cause lowered air quality and impact surface and ground waters. The degree of impact is a function of the type of unit used, the size of the unit constructed, and the location. In any event, the use of on-site generation would not negate the need for an additional transmission line into California-Pacific's service area. In addition to the unmitigated air pollution problems of burning oil or coal to generate electricity, this alternative would also have the unmitigated impacts attributable to some necessary transmission line construction described previously (electronic interference, temporary air pollution, soil erosion, right-of-way clearing, wildlife disturbance, additional vehicular access, degradation of natural beauty, livestock disturbance, archeological site damage, and increased fire hazard).

## E. Alternative Transmission Line Designs

### E.1. Double Circuit Design

Double circuit construction allows the transmission of electricity over one transmission line structure equivalent to that transmitted over two conventional lines. In general, the environmental impacts are about equal to the construction of one conventional transmission line. Double circuit 230 KV facilities require steel towers that would be much taller than the proposed wood single circuit structures. The double circuit structures would be much harder to screen and have more visual impacts.

### E.2. Steel Towers

The use of steel towers in certain instances offers some environmental advantages. Steel towers often blend with the background better than wood towers because of the latticework nature of the supporting columns. Steel towers are easier to assemble in inaccessible areas due to the lighter weight of the component parts. They are stronger and the maximum height is not limited by the length of available poles. Thus, fewer towers are required per mile.

The overall environmental impacts of using steel towers are similar to those detailed in previous sections. Roads would be required along the lines. The development of access roads and right-of-way clearing would result in vegetation loss and soil erosion. Construction operations would contribute to increased sediment and turbidity problems on live and intermittent streams. This type of line would also impact wildlife through the removal or disturbance of vegetative cover and disturbance to fishery streams.

### E.3. Underground Transmission

Undergrounding low voltage distribution lines is technically feasible. There are places where high voltage and extra high voltage lines are placed underground. These locations are normally in large cities or other areas where localized development requires underground installation for short distances.

The undergrounding of high voltage lines with present day technology requires the use of an oil or gas filled pipe system to effectively cool and insulate the conductors. A considerable amount of energy is lost and reliable power transmission over long distances at a reasonable cost is not available with present engineering technology.

The environmental impact of an underground line on the ground surface would be similar to those described throughout the statement. The extent of the surface disturbance, vegetation loss, soil erosion, and wildlife habitat loss for an underground line would be greater than for an overhead line. The construction of a trench to bury the line would require extensive bulldozer work and blasting along the route. Additional roads would also be required. The use of undergrounding eliminates the visual impacts of overhead lines and transmission towers but land scars may create additional visual problems. Maintenance of an underground line would require excavating a portion of the line again.

### E.4. Alternative Construction Methods

Conventional construction methods call for vehicular access to each structure site and for the preparation of an area to assemble the structure on the ground. The use of helicopters, specially designed all terrain vehicles, or other construction methods that reduce the amount of vegetation and soil disturbance created by access roads would reduce the environmental impacts described in the statement. Four acres disturbance per line mile was used to quantify the impacts of conventional construction methods. The use of helicopters or other methods which reduce the need for access roads would result in an acre or less disturbance per line mile. The impacts directly resulting from surface disturbance would be reduced accordingly. Due to the elimination of land scarring, visual impacts may also be lessened. Less surface disturbance would reduce the possibility for archaeological site damage and the sediment problems associated with conventional construction. These methods would produce obvious environmental advantages.

None of the routes studied would require total use of unconventional methods. However, all of the potential corridors have areas where unconventional methods are justified. The amount of this type of construction would depend upon the actual route selected.

### F. Alternative Line Sizes

By utilizing power company estimates, it becomes clear that a 230 KV line would sufficiently service the area's needs for at least 20 years. When discussing power needs, this time frame is considered short term. At first glance, the construction of a 345 KV transmission line rather than a 230 KV line appears to be an attractive alternative. The initial environmental impact from such a line would be only slightly increased over construction of a single 230 KV line. In addition, the line would be sufficiently large enough to supply power to California-Pacific customers for a period of over 20 years.

In spite of these apparent advantages, the construction of a 345 KV line does have some serious drawbacks. Most of these drawbacks are economic factors which could result in environmental problems. First, a line of this size would cost substantially more to construct than a 230 KV line. In addition to increased initial cost the substation costs involved in tapping the line at some future date could be excessive. At this point, it should be reiterated that the main objective of any new transmission line to California-Pacific's service area is to serve as a distribution line. The costs associated with tapping a 345 KV line suggest that at some future date it may be economically attractive to parallel the line with a smaller voltage line rather than tap the existing line at new load centers. This situation would result in two transmission lines rather than one. The environmental impacts for transmission line construction are discussed throughout the statement. An additional line would add to the impact previously described.

### G. Conservation of Energy

A reduction in power consumption to reduce or eliminate the need for the proposed action was considered as an alternative. Due to the diversified, growing economy of the area, a voluntary reduction would be impossible to obtain. Even if a reduction could be obtained, the overall growth of the area would still result in an eventual need for additional power.

## IX. CONSULTATION AND COORDINATION WITH OTHERS

### A. Consultation and Coordination for the Draft Statement

Public meetings were held in Cedar City on October 17, 1973, and in Richfield on October 18, 1973, to obtain public opinion concerning the need for additional power in the Cedar City area and the means of securing additional supplies. The combined attendance at both of these meetings was less than 60 people. Almost exclusively the comments at the Cedar City meeting reflected the desire of area residents to obtain additional electrical energy for the Cedar City area. Attendance at the Richfield public meeting was poor and no comments other than those of various utility companies and governmental agencies were received.

Consultation with appropriate Federal and State agencies was made to assure adequate consideration and coordination in accordance with the following applicable environmental protective and coordination acts.

#### National Historic Preservation Act

Contact was made with the Utah State Historic Preservation Officer. Appendix G-10 reflects such consultation and the views of the Utah State Historic Preservation Officer.

#### Clean Air Act

Consultation was made with Mr. Dave Emery, Environmental Protection Agency, Denver, Colorado. The view of EPA was that they were properly notified and would review the draft statement in compliance with Section 309 of the Clean Air Act.

EPA concurred with the Utah State Office, Bureau of Land Management, that due to the multitude of environmental statements simultaneously underway absolute consultation on every project prior to a draft release was not possible; therefore, they further agreed to utilize the draft environmental statement for their formal input and consultation.

#### Fish and Wildlife Coordination Act, Endangered Species Act and Bald Eagle Protection Act

Mr. James A. Young, Fish and Wildlife Service, Salt Lake City, Utah, was consulted regarding possible impacts on fish and wildlife. Appendix G-2 reflects written views of the Fish and Wildlife Service.

#### Section 6 of the Land and Water Conservation Fund Act and the Wild and Scenic Rivers Act

Mr. Harold Green, Bureau of Outdoor Recreation, Denver, Colorado, was consulted in regard to the above mentioned legislation. Comments expressed by Mr. Green were that, based upon verbal descriptions of the proposal, it did not appear that the proposal would conflict with any programs or projects under jurisdiction of BOR. He indicated more specific comments on the proposal were to follow review of the draft environmental impact statement.

### B. Consultation and Coordination for the Final Environmental Statement

The Draft Environmental Statement was distributed for review to 22 federal agencies, Utah's senators and congressmen, 29 state agencies, and the local state senators and congressmen, and to 86 county and local entities, conservation groups, utility companies, universities, private organizations and individuals. See Appendix F for a complete list of all recipients of the draft statement.

Of the 137 recipients of the draft, 10 submitted written comments which are included in Appendix G.

Suggestions for inclusion of additional material in this Environmental Statement were accommodated or modified, based upon appropriate comments. Several comments addressed items beyond the scope of the statement and could not be included in the document. Each written comment received has a memorandum to the files attached stating how the response was treated. These are located in Appendix G.

The Bureau of Outdoor Recreation made a verbal comment prior to their receipt of the draft statement that they would provide more specific comment after review of the document. No further comments were received.

EPA agreed to utilize the draft environmental statement for their formal input and consultations. No comment was received from EPA.

# APPENDICES

## Table of Contents

| Title | Appendix No. |
|---|---|
| Soil Types | A |
| Hydrologic Classification of Soils Series | B |
| Definitions of Terms Used in Esthetics and Recreation Sections | C |
| Land Systems Analysis for Variety Class Determinations | D |
| Sample Stipulations for Inclusion in Right-of-Way Permit | E |
| List of Agencies, Organizations and Personnel Receiving Copies of Draft Environmental Statement for Review Purposes | F |
| Comments Received Following Distribution of Draft Environmental Statement for Review Purposes and Responses thereto prepared by the District Manager, Cedar City District | G |

# APPENDIX A

## SOIL TYPES[1]

### Soil Type #1

Typic Cryoborolls, Argic Cryoborolls, and Mollic Cryoboralfs

These are typical dark-colored soils of the high mountains. This soil is well developed and has an "A" Horizon up to 20 inches thick. Vegetative growth is lush, composed mostly of mountain brush, aspen, and spruce fir. Soils are well drained. Permeability is moderate to low and sediment production is low. These soils are in Hydrologic Group D. Potential for recovery after disturbance is greater than 70 percent.

### Soil Type #6

Typic Argiborolls, Typic Haploboralls, and Lithic Argiborolls

These are typical dark-colored soils of the mountains and plateaus. The average annual precipitation varies from 14 to 25 inches. Although much of the precipitation occurs as snow in the winter months, a significant amount occurs as rainfall during the summer. Vegetation is mainly pinyon-juniper, aspen, mountain brush, and big sagebrush. Soils are well drained. Permeability is moderate and runoff is low. Sediment production is low. This soil is Hydrologic Group B. Potential for recovery after disturbance is between 50 and 70 percent.

### Soil Type #10

Lithic Argiborolls, Typic Argiborolls with Rock Outcrops

These are typically dark-colored soils of the mountain areas. Soils may be cobbley or stoney with a stoney clay subsoil. Precipitation is 15 to 20 inches annually. The relief is sloping to very steep. The soils are well drained, permeability is moderate, runoff is low, and sediment production is moderate. The native vegetation is typically big sagebrush, various species of mountain browse, forbs and grasses with scattered ponderosa pine. The soils are mainly in Hydrologic Group D. Potential for recovery after disturbance is between 50 and 70 percent.

### Soil Type #11

Typic Haploboralls and Typic Agriborolls

These soils are typically deep, dark brown and gravelly with a cobbley or gravelly subsoil. They are typically underlain at depths of

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[1] Preliminary soil descriptions for the general soils map of the State of Utah, State Department of Agriculture and USDA Soil Conservation Service.

12 to 18 inches by a white, very cobbley calcic layer. Precipitation is between 15 and 20 inches annually. The soils are well drained, permeability is moderate, runoff is medium, and sediment production is low. The native vegetation is mainly sagebrush, grass and forbs. These soils are in Hydrologic Group B. Potential for recovery after disturbance is between 30 and 50 percent.

### Soil Type #23

Typic Argixerolls and Typic Haploxeralls and Calcic Argixerolls

These are dark-colored soils of the mountains and plateaus. Annual precipitation is between 14 and 25 inches. These soils are moderately deep to deep. The soils are well drained, permeability is moderate, runoff is moderately rapid, and sediment production is medium. Native vegetation consists of mahogany, oak brush, and associated shrubs, grasses, and forbs. These soils are mainly in Hydrologic Group B. Potential for recovery after disturbance is greater than 70 percent.

### Soil Type #26

Pachic Argixerolls and Typic Argixerolls

These are mainly dark-colored soils of the upland plains and terraces. Annual precipitation is between 12-14 inches annually. Relief is generally steep with a few gently rolling areas. These soils generally have a dark-colored surface soil over fractured bedrock. These soils are well drained. Permeability is moderate to slow, runoff is medium to moderately rapid and sediment production is low. The native vegetation is oakbrush, maple, mahogany, big sagebrush with associated forbs and grasses. These soils are in Hydrologic Group B. Potential for recovery after disturbance is between 50-70 percent.

### Soil Type #29

Cumulic Haploxeralls and Entic Haploxeralls

These are mainly dark-colored soils of the low lake terraces and flood plains of major streams. Precipitation varies from 14-25 inches annually. These soils are often used for winter wheat production. These soils have a deep, dark surface layer with silt, clay or loamy subsoils. They are well drained, permeability is medium, runoff is slow, and sediment production is low. These soils are in Hydrologic Group B. Potential for recovery after disturbance is greater than 70 percent.

### Soil Type #32

Aridic Calcic Argixerolls and Aridic Haploxeralls

The soils of this type are deep loams often with fine loam subsoil and may have a lime layer underneath the fine loamy subsoil. They are well drained, permeability is moderate, runoff is slow to medium and sediment production is moderate to low. Native vegetation is pinyon-juniper and sagebrush with associated grasses and forbs. Annual precipitation is estimated to be 12 to 14 inches. These soils are in Hydrologic Group B. Potential for recovery is greater than 70 percent.

### Soil Type #33

Lithic Argixerolls and Aridic Haploxeralls

These are typically dark-colored soils of the mountains and plateaus. Precipitation is from 12 to 14 inches annually. These soils are typically shallow to very shallow and have cobbley or very cobbley, loamy surface layers underlain by fine loamy subsoils. These soils are calcareous throughout and have a layer of lime accumulation immediately above the bedrock. The soils are well drained, permeability is moderate, runoff is medium, and sediment production is moderate to low. The native vegetation consists of pinyon-juniper, big sagebrush and associated grasses and forbs. These soils are in Hydrologic Group D. Potential for recovery after disturbance is between 30 and 50 percent.

### Soil Type #34

Aridic Calcixerolls and Xerollic Calciorthids

These are typically dark-colored soils of the mountains and plateaus with annual precipitation of 12 to 14 inches. Due to drought and frost conditions, these soils are generally poorly suited for crop production. Native vegetation is pinyon-juniper, big sagebrush, with associated grasses and forbs. These soils are used extensively for spring/fall livestock grazing and over-grazing is common. Relief is rolling to moderately steep. These soils are calcareous with a relatively thin dark surface layer underlain by a thick white layer of lime. These soils are well drained, permeability is moderate, runoff is moderately low, and sediment production is moderate to low. Native vegetation is juniper and big sagebrush with associated grasses and forbs. These soils are in Hydrologic Groups B and D. Potential for recovery after disturbance is greater than 70 percent.

### Soil Type #37

Aridic Calcixerolls and Xerollic Calciorthids

These soils are typically dark-colored soils of alluvial fans, terraces, and hills with annual precipitation of 12 to 14 inches. These soils have sometimes been cleared and used for dry farming. However, due to low rainfall they are best suited to seedings of exotic grasses. Some of these soils that have been used for dry land farming have been abandoned. Accelerated wind and water erosion often occurs on these abandoned soils. The relief is smooth to gently undulating with slopes mainly from 3 to 6 percent. Soils are well drained, permeability is moderate, runoff is medium to slow, and sediment production is moderate to low. Native vegetation is big sagebrush with scattered juniper. Soils are in Hydrologic Group B. Potential for recovery is greater than 70 percent.

### Soil Type #38

Ustic Torrifluvents and Ustic Calciorthids

These soils are deep, occur on flood plains and generally have gravelly loam profiles. They are characterized by a layer of lime accumulation in the subsoil immediately below the surface layer. They are well drained, permeability is moderate, runoff is moderate and sediment production is moderate to low. Native vegetation is big sagebrush with associated grasses and forbs. Estimated precipitation is 8 to 14 inches. These soils are in Hydrologic Group B. Recovery potential is greater than 70 percent.

### Soil Type #54

Xeric Torrifluvents and Xerollic Calciorthids

These are typically light colored soils of the desert, mountains, valleys and terraces. Annual precipitation varies from 8 to 14 inches. These soils are commonly used for irrigated farms and are extensively used for winter and spring/fall grazing by both livestock and wildlife. Some areas are dry farmed. Crested wheatgrass is successfully grown on this soil. Relief is generally smooth to gently undulating with slopes of 1 to 6 percent. These soils are generally deep silty loams with little or no evidence of developed layers or horizons. Some of these soils have a layer of lime accumulated in the subsoil. The soils are mainly well drained, permeability is moderate, runoff is medium to slow and sediment production is moderate to low. Native vegetation consists of big sagebrush, shadscale, horse brush, and winterfat with associated grasses and forbs. These soils are used for winter grazing. These soils are mainly in Hydrologic Group B. Potential for recovery after disturbance is between 50 and 70 percent.

### Soil Type #55

Xerollic Calciorthids and Xeric Torrifluvents

These are typically light colored soils of the desert mountains, valleys, terraces and fans. Annual precipitation is from 8 to 14 inches. Some of these soils are used for irrigated farming as well as dry farms.

Crested wheatgrass is successfully grown on these soils. These soils have little or no evidence of developed layers or horizons but may have a thick layer of lime accumulation beneath the light colored surface layer. These soils are well to somewhat excessively drained. Permeability is moderately rapid, runoff is medium and sediment production is moderate to low. Native vegetation is big sagebrush, shadscale, bud sage, horse brush, winterfat and associated grasses and forbs. These soils are mainly used for livestock grazing purposes. The soils are in Hydrologic Group A. Potential for recovery is between 50 and 70 percent.

### Soil Type #56

Lithic Xerollic Calciorthids and Xerollic Calciorthids

These are typically light colored soils of the desert mountains, valleys and terraces. Annual precipitation is from 8 to 14 inches. These soils are typically rocky and the vertical faces of some portions of the area give the appearance that the mountains are mainly rock outcrop. The soils are well to somewhat extensively drained. Permeability above the shallow bedrock is moderate to rapid, runoff is moderate to very rapid and sediment production is moderate to high. Native vegetation is dominantly grass and shrub with a few scattered juniper trees. These soils are used mainly for winter grazing. The soils are mainly in Hydrologic Group D. Potential for recovery after disturbance is between 30 and 50 percent.

### Soil Type #59

Typic Torrifluvents and Typic Torriorthents

These soils occur on low terraces and broad alluvial fans. They are mainly deep loamy or silty soils. They are well drained, permeability is moderate, runoff is slow to medium and sediment production is moderate. Some of these soils have a moderate concentration of salt and alkali in the subsoil. Native vegetation is shadscale, winterfat, greasewood and associated grasses and forbs. Halogeton is a common invader. Annual precipitation is about 8 inches or below. These soils are mainly in Hydrologic Group B. Recovery potential is less than 30 percent.

### Soil Type #68

Typic Natrargids and Typic Calciorthids

These soils are generally deep containing clay and fine loams. They have a strong accumulation of exchangeable sodium in the subsoil. Soluble salt is also high. These soils are primarily used for winter livestock grazing. However, a few areas have been reclaimed and are used for the production of irrigated crops. These soils are moderately well drained. Permeability is slow to moderate, runoff is slow to medium and sediment production is moderate. Native vegetation consists of greasewood, shadscale, alkali sacaton, budsage and other associated shrubs and grasses. These soils are in Hydrologic Group C. Potential recovery is less than 30 percent.

### Soil Type #69

Typic Fluvaquents and Typic Salorthids

These soils are deep but light colored usually containing clay or fine silt. The soils are moderately to strongly alkaline. Salinity is moderate but ranges from slight to strong. The soils are somewhat poorly drained, permeability is slow to very slow and runoff is slow to very slow. Topography is gentle to flat and sediment production is low. Native vegetation is a sparse cover of salicornia salt grass, pickleweed and greasewood. Potential for recovery after disturbance is less than 30 percent. These soils are in Hydrologic Group C.

### Soil Type #73

Typic Torripsamments and Typic Calciorthids

These soils occur on terraces and upland areas. The relief is distinctly rolling to dune-like with areas of shifting sand dunes. The soils are deep and sandy to coarse loamy and have a lime accumulation in the subsoil. They are well to excessively drained, permeability is rapid, runoff is slow and sediment production is low. Native vegetation is mainly sand sage, blackbrush, ephedra, Indian ricegrass, sand dropseed, rabbit brush and squawberry. Annual precipitation is 8 to 10 inches. These soils are mainly in Hydrologic Group A. Recovery potential is less than 30 percent.

### Soil Type #75

Xeric Torripsamments, Lava Flows and Xerollic Calciorthids

The soils of this type are deep loamy or sandy soils with lava flows, both young and older, making up 30 percent of the type. The soils are well to excessively drained, permeability is moderate to rapid, runoff is slow and sediment production is low. The native vegetation is mainly big sagebrush, squaw bush, rabbit brush with associated grasses and forbs. Annual precipitation is 8 to 10 inches. The Hydrologic Group is A and B. Recovery potential is less than 30 percent.

# APPENDIX B

## HYDROLOGIC CLASSIFICATION OF SOIL SERIES

Hydrologic soil groups are used in watershed planning to estimate runoff from rainfall. Soil properties are considered that influence the minimum rate of infiltration obtained for a bare soil after prolonged wetting. These properties are: depth of seasonally high water table, intake rate and permeability after prolonged wetting, and depth to very slowly permeable layer. The influence of ground cover is treated independently--not in hydrologic soil groupings.

The soils have been classified into four groups, A through D. Statements in parentheses following the definition may be helpful to soil scientists wishing to place soils into hydrologic groups using the Soil Classification System.

### A. Low runoff potential

Soils having high (rapid) infiltration rates even when thoroughly wetted and consisting chiefly of deep, well to excessively drained sands or gravels. These soils have a high rate of water transmission. (Includes Psamments except those in Lithic, Aquic, or Aquodic subgroups; soils other than those in group C or D in fragmental, sandy-skeletal, or sandy families; soils in Grossarenic subgroups of Udults and Udalfs; and soils in Arenic subgroups of Udults and Udalfs except those in Clayey or fine families.)

### B. Moderately low runoff potential

Soils having moderate infiltration rates when thoroughly wetted and consisting chiefly of moderately deep to deep, moderately well to well drained soils with moderately fine to moderately coarse textures with moderately slow to moderately rapid permeability. These soils have a moderate rate of water transmission. (Soils other than those in groups A, C, or D.)

### C. Moderately high runoff potential

Soils having slow infiltration rates when thoroughly wetted and consisting chiefly of soils with a layer that impedes downward movement of water, soils with moderately fine to fine texture, soils with slow infiltration due to salts or alkali, or soils with moderate water tables. These soils may be somewhat poorly drained. Well and moderately well drained soils with slowly and very slowly permeable layers (fragipans, hardpans, hard bedrock, and the like) at moderate depth (20-40 inches). (Includes soils in Albic or Aquic subgroups; soils in Aeric subgroups of Aquents, Aquepts, Aquolls, Aqualfs, and Aquults in loamy families; soils other than those in group D that are in fine, very fine, or clayey families except those with kaolinitic, oxidic, or halloysitic mineralogy; Humods and Orthods; soils with fragipans or petrocalcic horizons; soils in shallow families that have permeable substrata; soils in Lithic subgroups that have rock that is pervious or cracked enough to allow water to penetrate.)

### D. High runoff potential

Soils having very slow infiltration rates when thoroughly wetted and consisting chiefly of clay soils with a high swelling potential, soils with a permanent high water table, soils with a claypan or clay layer at or near the surface, soils with very slow infiltration due to salts or alkali, and shallow soils over nearly impervious material. These soils have a very slow rate of water transmission. (Includes all Vertisols, all Histosols; all Aquods; soils in Aquents, Aquepts, Aquolls, Aqualfs, and Aquults except for Aeric subgroups in loamy families; soils with natric horizons; soils in Lithic subgroups that have impermeable substrata; and soils in shallow families that have impermeable substrata.)

# APPENDIX C

## DEFINITIONS OF TERMS USED IN ESTHETICS AND RECREATION SECTIONS

### Setting

The physical surroundings of an area which the transmission line corridor passes. In south central Utah, five settings are discussed. They are urban, suburban, rural, range or forest (either undeveloped or developed), and industrial. Only the last three are found along the route discussed in this statement.

Descriptions of these settings are condensed as follows:

#### A. Industrial

Because of its industry-related nature a transmission line readily blends into this setting. There are usually power and telephone lines, roads, railroads and excavations located in industrial areas, and scenery and visual quality is not an important factor.

#### B. Rural

Developed agricultural land is the focus of this setting. Existing developments include scattered towns and dwelling areas, roads, croplands, fences, reservoirs, canals, and utility lines. Transmission lines are generally compatible with this type of setting.

#### C. Developed Range or Forest Setting

This setting includes range and forested areas. Occasional roads, trails, power and telephone lines, and livestock fences are found in this setting. It also includes areas of high scenic quality.

#### D. Undeveloped Range or Forest Setting

This setting includes those areas which are free from man-made developments. Examples of this setting are designated roadless areas.

### Scenic Quality

This evaluation divides the landscape into three classes using land systems inventory procedures as a base. The three classes are unique quality, moderate quality and minimum quality. The scenic quality was rated using the criteria outlined in the Bureau of Land Management Manual, Number 6111, Quality Evaluation of Recreation Use Opportunities. The quality evaluation chart for rating scenery was utilized with consideration given to the key factors of land form, color, water, vegetation, uniqueness, and intrusions in evaluating the corridors.

Portions of the corridors were given similar ratings according to like physiographic characteristics, similar visual patterns, texture, color, variety, etc., and similar impacts from intrusions.

The region considered as a basis for rating scenic qualities was the southern half of Utah with its predominance of mountain-valley type scenery.

### A. Unique Quality

Unique quality land is generally above average when compared to surrounding areas. It is located mainly in mountains where the land forms, vegetation, rocks, and water features have combined to create a pleasing scenic area. Man-made developments are not noticeable except for short sections of roads and trails which blend very well.

### B. Moderate Quality

Land within this category exhibits vegetative, rock, and water patterns which are interesting to the viewer; however, they are not outstanding. Some man-made developments are apparent, but they do not intrude and become offensive.

### C. Minimum Quality

Land in this category generally exhibits very little variety in land forms and inherent features. Minimum quality land tends to become monotonous. Numerous man-made intrusions are visually prominent, and scenic beauty is often negated by these developments.

## Transportation Routes

In general, there are three types of transportation routes:

### A. National Routes

These routes are traveled by large volumes of people from one region of the United States to another. They include the Interstate Highway system and State Highways which serve as links between the Interstate systems and areas of national importance such as National Parks.

### B. Regional Routes

These routes connect points of interest which are important to a region of the State. They are traveled by moderate volumes of people.

C. Local Routes

These routes are mainly of interest to residents of a localized area. They carry a low volume traffic. Jeep and other undeveloped roads are included in this category. This category was not discussed at length in this statement because of its high number.

## Visual Area

Along a travel route, one views the landscape as either the foreground, middleground or background.

A. Foreground

The viewing area immediately adjacent to the observer out to 1/4 to 1/2 mile away.

B. Middleground

The viewing area between 1/4 to 2-3 miles from the observer.

C. Background

The viewing area beyond 2-3 miles from the observer.

D. Non-Visual

That area which cannot be seen from national or regional travel routes.

## Recreation Site - Developed

An existing campground which has been developed with facilities such as roads, turnouts, tables, fireplaces, tent pads, etc.

## Recreation Site - Potential (Also referred to as "National Forest Recreation Survey - NFRS Site)

An inventoried area of land which has potential for use as a developed recreation site sometime in the future depending on use demands and availability of funds.

## Recreation Occupancy Spot

A small informal camp area used by fishermen and deer hunters, generally not large enough for more than two or three families at a time.

## APPENDIX D

## LAND SYSTEMS ANALYSIS FOR VARIETY CLASS DETERMINATION

This step divides the landscape into three classes of variety using land systems inventory procedures as a base:

Class A - Unique Variety
Class B - Moderate Variety
Class C - Minimum Variety

It divides the whole planning area into land type associations having similar variety characteristics. The frame of reference is identified by the subsection level of generalization. The result is a map divided into areas of different scenic potentials.

## CRITERIA FOR VARIETY CLASS DETERMINATION

| Features | Unique Variety | Moderate Variety | Minimum Variety |
|---|---|---|---|
| Landforms | National importance | Regional importance | Local importance |
| | Unusual topography | Common topography | Monotonous topography |
| | Diverse type | Uniform type | Monotonous type |
| Rock Formations | National importance | Regional importance | Local importance |
| | Unusual size | Common size | |
| | Unusual shape | Common shape | Monotonous shape |
| | Unusual texture | Common texture | Monotonous texture |
| | Unusual distribution | Common distribution | Monotonous distribution |
| Water Forms | National importance | Regional importance | Local importance |
| | Unusual size | Common size | |
| | Unusual shoreline | Common shoreline | Monotonous shoreline |
| | High water quality | Average water quality | Low water quality |
| | Unusual reflections | Common reflections | No reflections |
| | National importance | Regional importance | Local importance |
| | Unusual motion | Common motion | Still |
| | Unusual configuration | Common configuration | Monotonous configuration |
| | High water quality | Average water quality | Low water quality |
| Vegetation | Unusual stand size | Common stand size | Minimal stand size |
| | Unusual texture | Common texture | Monotonous texture |
| | Unusual seasonal color | Moderate seasonal color | No seasonal color |
| | Unusual forms | Common forms | Monotonous forms |
| Combinations of features | High contrast | Moderate | Monotonous |
| Man-made facilities | Extremely old<br>Well preserved<br>Native materials<br>National importance | | Partially<br>Deteriorated beyond recognition<br>Abandoned deteriorated and unkept new construction |
| Intrusions by Man | Very few intrusions<br>Not readily visible | | Many intrusions on resources<br>Readily visible |

# QUALITY EVALUATION OF RECREATION USE OPPORTUNITIES

**Quality Evaluation Chart for Sightseeing - Scenery**

Quality Evaluation Chart

SCENERY

| KEY FACTORS | RATING CRITERIA AND SCORE | | |
|---|---|---|---|
| ①<br>LAND FORM | Vertical or near vertical cliffs, spires, highly eroded formations, massive rock outcrops, severe surface variation.<br>4 | Steep canyon walls, mesas, interesting erosional patterns, variety in size & shape of land forms.<br>2 | Rolling hills, foothills, flat valley bottoms.<br>1 |
| ②<br>COLOR | Rich color combinations variety or vivid contrasts in the color of soil, rocks, vegetation or water.<br>4 | Some variety in colors and contrast of the soil, rocks & vegetation, but not dominant.<br>2 | Subtle color variations, little contrast, generally muted tones. Nothing really eye-catching.<br>1 |
| ③<br>WATER | Still, chance for reflections or cascading white water, a dominant factor in the landscape.<br>4 | Moving and in view or still but not dominant.<br>2 | Absent or present but seldom seen.<br>1 |
| ④<br>VEGETATION | A harmonious variation in form, texture, pattern, and type.<br>4 | Some variation in pattern and texture, but only one or two major types.<br>2 | Little or no variation, contrast lacking.<br>1 |
| ⑤<br>UNIQUENESS | One of a kind or very rare within region.<br>6 | Unusual but similar to others within the region.<br>2 | Interesting in its setting, but fairly common within the region.<br>1 |
| ⑥<br>INTRUSIONS | Free from aesthetically undesirable or discordant sights and influences.<br>2 | Scenic quality is somewhat depreciated by inharmoneous intrusions but not so extensive that the scenic qualities are entirely negated.<br>1 | Intrusions are so extensive that scenic qualities are for the most part nullified.<br>-4 |

A = 15-24  B = 10-14  C = 1-9

**EXPLANATION OF RATING CRITERIA**

① Land Form or topography becomes more interesting as it gets steeper and more massive. Examples of outstanding land forms are found in Grand Canyon, the Sawtooth Mountain Range in Idaho, the Wrangle Mountain Range in Alaska, Rocky Mountain National Park, etc.

② Color. Consider the overall color of the basic components of the landscape (i.e., soil, rocks, vegetation, etc.) as they appear during the high use season. Key factors to consider in rating "color" are variety, contrast, and harmony.

③ Water is that ingredient which adds movement or serenity to a scene. The degree to which water dominates the scene is the primary consideration in selecting the rating score.

④ Vegetation. Give primary consideration to the variety of patterns, forms, and texture created by the vegetation.

⑤ Uniqueness. This factor provides an opportunity to give added importance to one or all of the scenic features that appear to be relatively unique within any one physiographic region. There may also be cases where a separate evaluation of each of the key factors does not give a true picture of the overall scenic quality of an area. Often it is a number of not so spectacular elements in the proper combination that produces the most pleasing scenery -- the uniqueness factor can be used to recognize this type of area and give it the added emphasis it needs.

⑥ Intrusions. Consider the impact of man-made improvements on the aesthetic quality. These intrusions can have a positive or negative aesthetic impact. Rate accordingly.

INSTRUCTIONS (See Sec. .1 for general procedures.)

Purpose: To rate the aesthetic quality of the scenic resource on all BLM lands.

How to Identify Scenery Value: All Bureau lands have scenic value.

How to Determine Minimum Suitability: All BLM lands are rated for scenic values. Also rate adjacent or intermingling non-BLM lands.

How to Delineate Rating Areas: Consider the following factors when delineating rating areas:

1. Like physiographic characteristics (i.e., land form, vegetation, etc.
2. Similar visual patterns, texture, color, variety, etc.
3. Areas which have a similar impact from intrusions (i.e., roads, structures, mining operations, or other surface disturbances).

# APPENDIX E

## SAMPLE STIPULATIONS FOR INCLUSION IN RIGHTS-OF-WAY PERMIT

### A. Air Quality

Roads will be sprayed with water in areas where heavy use of dirt roads causes a dust problem.

### B. Soil

1. Travel will be permitted only on existing roads or approved construction roads. No off-road travel will be allowed outside the right-of-way.

2. Existing roads will be used wherever feasible. Locations of new roads will be specifically approved by the appropriate authorized officer. They will be constructed with the minimum possible clearing and will be no wider than necessary for use by the specific equipment needed.

3. In areas of moderate sideslope, road restoration will be accomplished in such a manner that the equipment doing the work will not disturb the area adjacent to the road. On steep slopes, the fill material will be replaced and the cut bank sculptured to approximately the original slope. All restored areas will be water barred and reseeded. Water bars will be added at a 45 degree angle at 100 foot intervals on roads with slopes of less than 10 percent and at 50 foot intervals on roads with slopes in excess of 10 percent gradient.

4. All used oil or other petroleum products will be hauled away. There will be no release of crankcase oil, etc., on the ground.

5. Scalping of topsoil will not be allowed outside roads and structure sites.

6. To prevent unacceptable erosion problems, no roads will be built within a half-mile strip immediately east of Monroe. Construction will be by helicopter in this area.

7. Dirt roads will not be used at times when such use will cause severe rutting.

8. No roads will be constructed across the three steep canyons west of Circleville. Specific access routes to the proposed structure sites in this area will be designated by the authorized

officer at the time of construction.

9. The Company will comply with the applicable state and federal laws and regulations concerning the use of poisonous substances, including insecticides, herbicides, fungicides, rodenticides and other similar substances. Prior to the use of such substances on or near the right-of-way, the Company will obtain from the authorized officer approval of a written plan for such use. The plan will state the type and quantity of material to be used, the pest to be controlled, the method of application and such other information as the authorized officer may require. All use of such substances on or near the right-of-way will be in accordance with the approved Plan. If the use of a poison is prohibited by the Secretary of the Interior or Agriculture, it will not be used. If use of a poison is limited by the Secretary of the Interior or Agriculture, it will be used only in accordance with that limitation.

## C. Vegetation

1. No vegetation will be removed that does not seriously interfere with construction and maintenance of the line.

2. To the fullest extent possible, brush, timber, and other wood products will be disposed of by chipping or shredding. After reduction in this manner the materials will be dispersed to serve as mulch rather than burned.

3. Brush blades will be used instead of dirt blades in clearing operations where such use will preserve the natural grass and low brush cover.

4. In areas where the authorized officer deems necessary, reseeding will be required. Reseeding will be of native plant species determined by the authorized officer of the BLM or Forest Service to have a high success probability. If revegetation rehabilitation fails to establish in three years, the Company will be required to reseed the previously treated area.

## D. Water

1. There will be no pushing of soil into stream beds.

2. All used oil or other petroleum products will be hauled away to a sanitary land fill meeting state and federal standards. There will be no release of crankcase oil, etc., into streams.

3. Roads will cross drainage channels at right angles and level with the stream gradient.

4. Drainage channels will not be blocked or changed.

5. Portable chemical toilets will be utilized during all phases of construction.

6. Storage yards and construction camps will not be located within 500 feet of waterways.

## E. Wildlife

1. Where the transmission lines will be routed through any critical areas, i.e., big game wintering areas, sage grouse strutting ground and/or waterfowl wintering areas, the BLM will require that construction be confined only to non-sensitive periods. These are:

Big Game Habitat - December through April
Sage Grouse Strutting Ground - March and April
Waterfowl Habitat - November through February

Refinements of these time periods will be determined by the appropriate District Manager and Forest Ranger.

2. In the sensitive wildlife areas mentioned above, where access is currently limited, construction roads will be closed upon completion of the line. Construction methods that minimize road construction will be utilized in these areas.

3. Structures will be designed in such a fashion that it will be impossible for raptors to be electrocuted by perching on them.

4. Construction workers will not be permitted to carry firearms on the project. Violators of any state or federal law protecting wildlife will be reported.

## F. Fish

Previous stipulations listed to protect soil and water will be adequate to prevent adverse impacts on fish.

## G. Livestock

Disturbance of range improvements such as fences, roads, watering facilities, etc., encountered during the construction and maintenance of the right-of-way will be kept to an absolute minimum. The Company will be required to immediately restore any damaged improvements to at least their former state. Functional use of these improvements will be maintained at all times. When necessary to pass through a fence line the fence will be braced on both sides of the passageway prior to cutting of the fence. Four-inch timbers or larger will be used for the bracing timber. A gate acceptable to the authorized officer must be installed in the gate opening and kept closed when not in actual use. Where a permanent road is to be constructed or maintained, cattleguards will be placed at all fence crossings.

## H. Scenic and Esthetic Quality

1. Wherever possible, the following will be avoided to reduce visual impact of the line:

   a. Ridgetops.
   b. High points in a particular area.
   c. Areas where the line will be skylined.
   d. Long views of lines coming down hillsides adjacent to highways.
   e. Crossing highways at high points in the road where towers can be seem from a great distance.

2. General cleanup will be done continually throughout the duration of the project to prevent littering.

3. Leveling at the structure site will be limited to the crane pad.

4. All non-combustible waste such as conductor, ceramic, or metal scraps will be collected and hauled to an authorized dump.

## I. Historical and Archaeological

1. Prior to construction, the Company will complete a survey and inventory of historical, archaeological and paleontological sites within the area to be occupied by the right-of-way and the access roads. This survey will be performed by a BLM-approved archaeologist. Results of this survey will be provided to the authorized officer who will require the Company to relocate the proposed transmission line facilities in order to avoid destruction of such values, or to delay construction until salvage operations are completed. All costs of survey, inventory and salvage operations will be borne by the Company. All salvage will remain the property of the United States. Any site discovered which will qualify for inclusion on the National Register of Historic Places will require line relocation and appropriate steps taken to propose the site for inclusion on the Register.

2. A BLM-approved archaeologist will accompany construction activities. In the event that significant historical, archaeological or paleontological resources are encountered during construction, that phase of construction will be halted, the area inspected to determine significance of the values, and appropriate action taken prior to resumption of construction.

## J. Fire

1. Burning will be done only in conformance with Utah Air Quality Standards and burning permit requirements.

2. All slash will be mulched, removed or burned to prevent accumulation which could pose a fire hazard.

## K. Public Safety

1. The power line will conform to all federal and state regulations pertaining to safety. Specific state and federal regulations which will apply to the proposed action are as follows:

a. 1953 Utah Code Annotated as Amended Section 27-2-7(22)(A) - Regulations For the Control and Protection of State Highway Rights-of-Way, Protection of Traffic During Construction, p.16.

b. Construction safety standards - Subpart V of Department of Labor Regulations (Part I), and Bureau of Reclamation Supplement (Part II) Section 22-Transmission Line Construction.

c. All permanent access roads will be constructed to standards as set forth in BLM Manual 9113. Signing of roads will conform to BLM Manual 9132 and the Utah State Manual for Construction and Maintenance Traffic Control.

# APPENDIX F

## LIST OF AGENCIES, ORGANIZATIONS AND PERSONNEL RECEIVING COPIES OF DRAFT ENVIRONMENTAL STATEMENT FOR REVIEW PURPOSES

### FEDERAL

Environmental Protection Agency
125 South State Street
Salt Lake City, Utah 84111

Mr. Robert Oppenheimer
U.S. Bureau of Sport Fisheries
& Wildlife
Delta, Utah 84624

Mr. Jack Moffitt
U.S.G.S.
8432 Federal Building
Salt Lake City, Utah 84111

*Bureau of Sport Fisheries
& Wildlife
2215 Federal Building
Salt Lake City, Utah 84111

Mr. Clyde Hemmert
Farmers Home Administration
25 South 1st East
Richfield, Utah 84701

Mr. Clyde Larsen
Soil Conservation Service
55 South 1st East
Richfield, Utah 84701

Merlin I. Bishop, Supervisor
Dixie National Forest
Cedar City, Utah 84720

Hon. Wayne Owens
2311 Federal Building
Salt Lake City, Utah 84111

Hon. K. Gunn McKay
Rm. 1424 Federal Bldg.
324 25th Street
Ogden, Utah 84401

Off. of Cong. K. Gunn McKay
First Security Bank Bldg. #213
92 N. University Ave.
Provo, Utah 84601

Office of Sen. Frank E. Moss
Rm. 1416 Federal Building
Salt Lake City, Utah 84111

Off. of Sen. Wallace F. Bennett
Rm. 1010 Federal Building
Salt Lake City, Utah 84111

Soil Conservation Service
U.S. Department of Agriculture
Rm. 4401 Federal Building
Salt Lake City, Utah 84111

Federal Aviation Administration
P.O. Box 1029
Cedar City, Utah 84720

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Utah Division
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Fishlake National Forest
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*Bureau of Reclamation
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Guy Bird, Coordinator
Resource Conservation Development Office
Cedar City, Utah 84720

Hon. Wallace F. Bennett
United States Senate
Washington, D. C. 20510

Hon. Frank E. Moss
United States Senate
Washington, D. C. 20510

*Comments received and attached

## FEDERAL - 2

Soil Conservation Service
196 East Tabernacle
St. George, Utah 84770

Mr. Garth Colton
Bureau of Land Management
Arizona Strip District Manager
196 East Tabernacle
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Temple Reynolds, Superintendent
Glen Canyon National Recreation Area
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Page, Arizona 86040

STATE

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Utah Division of Wildlife Resources
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Utah Department of Highways
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Utah State University Extension Service
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Mr. Bobby Carter
Utah State Forestry &
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Land Use Planner
Utah State Forestry & Fire Control
1596 West North Temple Street
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State Planning Coordinator
State Capitol Building
Salt Lake City, Utah 84114

Utah Division of Water Resources
State Capitol Building - Rm. 435
Salt Lake City, Utah 84114

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Utah Division Parks & Recreation
1596 W. North Temple
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Utah Tourist & Publicity Council
c/o Milt Jolley
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Salt Lake City, Utah 84114

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Utah State Planning Coordinator
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*Comments received and attached

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Office of Community Development
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Utah Public Service Commission
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Environmental Council
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Salt Lake City, Utah 84111

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44 Medical Drive
Salt Lake City, Utah 84113

*Comments received and attached

## LOCAL AGENCIES AND OTHER INTERESTED PARTIES

Sevier County Commissioners
c/o Dean Nielson, Chairman
Sevier County Courthouse
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Dr. G. Stanford Rees
State Senator
Gunnison, Utah 84634

Mr. Duane Washburn
State Representative
Monroe, Utah 84754

Doug Merrot, Exec. Director
Six-County Economic Development Dist.
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Mr. Homer Bandley
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*Comments received and attached

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Salt Lake Exploration Division
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Union Oil Company of California
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Piute County Commission
c/o Basil Lay
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Pratt Seegmiller, Mayor
Marysvale, Utah 84750

Burke Barlow, Mayor
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*Comments received and attached

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Cedar City Business and Professional
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Cedar City, Utah 84720

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Cedar City, Utah 84720

Iron County Commissioners
County Courthouse
Parowan, Utah 84761

LOCAL - 4

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c/o County Clerk
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40 Diagonal
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Parowan Gun & Rod Club
Parowan, Utah 84761

Forest Hunter, Manager
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Cedar City, Utah 84720

Radio Station KDXU
118 East 100 North
St. George, Utah 84770

Don Cartwright, Manager
Radio Station KSUB
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St. George City Coordinator
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Sierra Club
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Salt Lake City, Utah 84122

Radio Station KSVC
Richfield, Utah 84701

Washington County Commissioners
St. George, Utah 84770

Ms. Lola M. Johnson, Secretary
St. George Chamber of Commerce
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St. George, Utah 84770

Iron County Cattlemen's Association
c/o Cleo Wood
390 South 700 West
Cedar City, Utah 84720

Washington County News
Attn: Asa L. Mountford
23 East 100 North
St. George, Utah 84770

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League of Women Voters
129 North 800 West
Cedar City, Utah 84720

Tom Anderson, President
Dixie Wildlife Federation
Washington, Utah 84780

Millard County Commissioners
Fillmore, Utah 84631

Kendall O. Gurr, Mayor
Parowan, Utah 84761

Ivan S. Robb, Town President
Paragonah, Utah 84760

California-Pacific Utilities
107 North Main Street
Cedar City, Utah 84720

Beaver County Commissioners
Beaver, Utah 84713

Six County Organization
Juab County Courthouse
Nephi, Utah 84648

# APPENDIX G

## Comments Received Following Distribution of Draft Environmental Statement for Review Purposes and Responses Thereto Prepared By District Manager, Cedar City

Calvin L. Rampton
Governor

Burton L. Carlson
State Planning
Coordinator

**STATE OF UTAH**
Office of the
**STATE PLANNING COORDINATOR**
118 State Capitol
Salt Lake City, Utah 84114
(801) 328-5246

UTAH STATE OFFICE

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April 4, 1975

Mr. Paul Howard, Director
Bureau of Land Management
Federal Building
125 South State Street
Salt Lake City, Utah 84111

Dear Mr. Howard:

In accordance with the requirements of OMB circular A-95 the Utah State Environmental Coordinating Committee has reviewed the draft environmental statement for the proposed Sigurd to Cedar City power transmission line.

We feel that the document, for the most part, adequately represents the potential environmental impact of the proposed project. However, the inferences contained on page 33 (and other places in the text) that Interstate Route 70 would be on the west side of Sevier Valley do not address the complete picture. At the present stage of highway project development, three conceptual alternatives are still under consideration and are described in the soon-to-be-released draft environmental impact statement. One suggested highway alignment would closely parallel the proposed Sevier Valley and/or Cove Fort transmission line corridors. Although the danger of a conflict between two major federal actions is remote, it would be well to maintain a close liaison between the BLM, UP&L and the State Highway Department. Perhaps even some multiple use and joint development possibilities should be explored.

This letter reflects the full and complete comments of the State Clearinghouse.

Thank you for giving us an opportunity to review and comment on this draft environmental impact statement.

Sincerely,

A. Glenn Parsons
Assistant State Planning Coordinator

AGP/els

OPTIONAL FORM NO. 10
MAY 1962 EDITION
GSA FPMR (41 CFR) 101-11.6

UNITED STATES GOVERNMENT

# *Memorandum*

TO : The Files DATE: April 10, 1975

FROM : District Manager, Cedar City District Office

SUBJECT: Response dated April 4, 1975 from A. Glenn Parson, Assistant State Planning Coordinator, 118 State Capitol, Salt Lake City, Utah

At the present time the location of I-70 in Sevier Valley has not been decided. Three alternatives are still under consideration. One suggested alignment would closely parallel the proposed Sevier Valley and/or Cove Fort transmission line corridor. The close liaison that exists between the BLM, UP&L, and the State Highway Department in determining highway location would eliminate the possibility of physical conflicts between highway and transmission line rights-of-way. The potential for joint use and development of a single corridor will be explored.

This was addressed in Part III under "Transportation" on pages 93 and 94.

Harold E Goodson

5010-108

*Buy U.S. Savings Bonds Regularly on the Payroll Savings Plan*

United States Department of the Interior
FISH AND WILDLIFE SERVICE

AREA OFFICE COLORADO—UTAH
2215 FEDERAL BUILDING
125 SOUTH STATE STREET
SALT LAKE CITY, UTAH 84138

In Reply Refer To

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Action:
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November 22, 1974

Memorandum

To: State Director, Utah State Office
Bureau of Land Management
Salt Lake City, Utah

From: Acting Area Manager
U.S. Fish and Wildlife Service
Salt Lake City, Utah

Subject: Sigurd-to-Cedar City Power Transmission Line - Draft Environmental Statement

We have reviewed the draft environmental statement dated November 1974 for the transmission line from Sigurd, Utah, to Cedar City, Utah, proposed by the Utah Power and Light Company.

We have not had an opportunity to examine the proposed transmission corridors on the ground. However, based on our general knowledge of the area, we feel that the statement does an excellent job of describing fish and wildlife resources and analyzing probable impacts of the project.

Our only comment is that increased access into some areas and the increased disturbance and harassment of wildlife might be considered long-term and largely irreversible impacts. It can be difficult to eliminate public use of an access road once the custom has been established.

We appreciate the opportunity to review the statement.

James A. Young

OPTIONAL FORM NO. 10
MAY 1962 EDITION
GSA FPMR (41 CFR) 101-11.6

UNITED STATES GOVERNMENT

# *Memorandum*

TO : The Files

DATE: April 10, 1975

FROM : District Manager, Cedar City District Office

SUBJECT: Response Dated November 22, 1974, from Acting Area Manager, James A. Young, U.S. Fish and Wildlife Service, Salt Lake City, Utah

Increased access into some areas would result in permanent disturbance and harassment to wildlife. This is noted in the "Adverse Effects Which Cannot be Avoided" section. Public use of an access road is difficult to eliminate unless effective physical barriers are constructed and maintained. Mitigating measures, page 104, specify that all access roads in sensitive wildlife areas where access is currently limited would be closed upon completion of the line. Where access is not currently limited the impact would not change from what it would be without the proposed power line.

Harold E. Goodson

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5010-108

STATE OF UTAH–DEPARTMENT OF SOCIAL SERVICES

CALVIN L. RAMPTON
Governor

PAUL S. ROSE
Executive Director

DIVISION OF HEALTH
44 MEDICAL DRIVE
SALT LAKE CITY, UTAH 84113
AREA CODE 801
328-6146

LYMAN J. OLSEN, M.D., M.P.H.
Director of Health

**Board of Health**
**Air Conservation Committee**
**Health Facilities Council**
**Medical Examiner Committee**
**Nursing Home Advisory Counc**
**Water Pollution Committee**

**OFFICE OF THE DIRECTOR**

March 21,1975

UTAH STATE OFFICE

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Action: 1
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Mr. Paul L. Howard
Utah State Director
Bureau of Land Management
Department of Interior
125 So. State
Salt Lake City, Utah

RE: Review Comments on Draft Environmental Statement Proposed Transmission Line from Sigurd to Cedar City

Dear Mr. Howard:

We have reviewed the Draft Environmental Statement for the proposed Sigurd to Cedar City Power Transmission Line. The following comments are offered concerning possible effects of the proposed transmission line on public water supply systems and pollution control of waters of the State in the various corridors being considered.

## Water Supply

The report indicates that, if the Sevier Valley Corridor is chosen, the transmission lines will be constructed near several springs which currently supply culinary water to the towns of Sevier, Junction and Circleville. If this corridor is chosen, special care should be taken to insure that these springs are not disturbed during construction.

## Wastewater & Water Pollution Control

As the report indicates, minor amounts of water pollution will result from construction wherever the corridors cross live streams. This should not be serious provided the mitigating measures outlines in Section IV of the report are followed.

Contamination of the adjacent waterways during construction can be kept to a minimum by such measures as are described in items 9 through 14. Particularly important considerations are locating storage yards and construction camps away from waterways (to the maximum extent feasible) and utilizing portable chemical toilets during all phases of construction.

If we can be of further assistance in the preparation of this Draft Environmental Statement, please let us know.

Very truly yours,

UTAH WATER POLLUTION COMMITTEE

Calvin K. Sudweeks
Executive Secretary

EHP/RSC:pag

cc: Central Utah District Health Dept.
Southwestern District Health Dept.

OPTIONAL FORM NO. 10
MAY 1962 EDITION
GSA FPMR (41 CFR) 101-11.6

UNITED STATES GOVERNMENT

# *Memorandum*

TO : The Files

DATE: April 10, 1975

FROM : District Manager, Cedar City District Office

SUBJECT: Response to Letter Dated March 21, 1975, from the Utah Division of Health

If the line is constructed in the Sevier Valley Corridor, the transmission lines would be located near several springs which currently supply culinary water to the towns of Sevier, Junction, and Circleville. The discussion on water supplies in the Impact sections has been reanalyzed. It was determined that there would be no impact on the culinary water supply of these towns.

To avoid contamination of adjacent waterways during construction, the Mitigating Measures section requires that no storage yards and construction camps be located within the right-of-way and that portable chemical toilets be utilized during all phases of construction. Storage yards will be located at existing UP&L sites on private lands. No construction camps are proposed. The water from the chemical toilets would be removed to an approved municipal sewer treatment system. These mitigating measures are noted on Pages 103 and 104.

Harold E. Isaacson

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5010-108

United States Department of the Interior
BUREAU OF RECLAMATION
UPPER COLORADO REGIONAL OFFICE
P.O. BOX 11568
SALT LAKE CITY, UTAH 84111

UTAH STATE OFFICE

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IN REPLY REFER TO: 151
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APR 15 '75

Memorandum

To: State Director, Bureau of Land Management, P. O. Box 11505, Salt Lake City, Utah 84111

From: Acting Regional Director, Salt Lake City, Utah

Subject: Sigurd-to-Cedar City Power Transmission Line - Draft Environmental Statement

We have reviewed the above draft environmental statement and do not have any comments to make on it. We appreciate the opportunity afforded us to review this statement.

E.J. Bynater

**WYOMING-UTAH-NEVADA**
**THE WUN CHAPTER OF**
**OUTDOORS UNLIMITED, INC.**

1067 Henderson Drive
Ogden, Utah 84404

Rt.
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March 17, 1975

Mr. Paul L. Howard
Utah State Director
Bureau of Land Management
Department of Interior
Federal Building
Salt Lake City, Utah 84111

Dear Mr. Howard:

The proposed Sigurd to Cedar City power transmission line traverses country much of which I am familiar with. While time did not permit detailed review of the Draft Environmental Statement of November 1974, I am satisfied that the choice of routes is such that little or no environmental degradation will take place as the result of construction and operation of this line. Your greatest problem will be to build construction roads in such a way they will not irreparably impair the landscape and cause erosion and to revegetate these roads or, in the absence of success with revegetation, stabilization of the disturbed ground. I do not see in your statement a plan of how to meet this important problem.

Use of wood power poles in place of steel towers, as you apparently intend to do over much of the route, will serve to blend the line into the landscape.

Thank you for providing us with a copy of the statement.

Very sincerely yours,

Joel L. Frykman

Joel L. Frykman
Vice President
WYOMING-UTAH-NEVADA CHAPTER
OUTDOORS UNLIMITED, INC.

OPTIONAL FORM NO. 10
MAY 1962 EDITION
GSA FPMR (41 CFR) 101-11.6

UNITED STATES GOVERNMENT

# *Memorandum*

TO : The Files

DATE: April 10, 1975

FROM : District Manager, Cedar City District Office

SUBJECT: Response Dated March 17, 1975 from Joel Frykman, Vice President, Wyoming-Utah-Nevada Chapter Outdoors Unlimited, Inc.
1067 Henderson Drive, Ogden, Utah

Mitigating measures for the protection and restoration of soil, vegetation, and water are discussed on pages 101-104 Specific actions to be taken in the event of revegetation failure have been added on page 103. The company would be required to make at least one follow-up revegetation treatment. The impact of total revegetation failure is discussed on page 108. A lag of 10 to 12 years would be required for establishment of native vegetation by natural means.

Harold E.

5010-108

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U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
REGION EIGHT
UTAH DIVISION
125 South State Street
P.O. Box 11563
Salt Lake City, Utah 84111

March 26, 1975

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IN REPLY REFER TO:
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Mr. Paul L. Howard, State Director
Bureau of Land Management
P.O. Box 11505
Salt Lake City, Utah 84111

Dear Mr. Howard:

SUBJECT: Comments on Draft Environmental Statement
Sigurd to Cedar City
Power Transmission Line

The above draft EIS has been made available to our office and was logged in March 5, 1975. Although we may not always have comments on this type of EIS, we do have one observation for this project which should be evaluated before design is completed.

The proposed alignment shown for the Cove Fort corridor follows very closely the corridor proposed for Interstate Route 70. From near Cove Fort to near Joseph, there will be some conflict between the two facilities. Other areas, for example near Sigurd, will require alignment crossings.

While it is possible for both facilities to occupy the same corridor, our concern is that the design of the two are coordinated.

We have been advised that the Utah State Department of Highways has not received a copy of the draft statement. Since their concerns may be useful in evaluating the impact of the proposed facility, we suggest you give them an opportunity to advise you of the locations where conflicts may occur.

Sincerely,

George W. Bohn
Division Engineer

OPTIONAL FORM NO. 10
MAY 1962 EDITION
GSA FPMR (41 CFR) 101-11.6

UNITED STATES GOVERNMENT

# *Memorandum*

TO : The Files

DATE:

FROM : District Manager, Cedar City District

SUBJECT: Response dated March 26, 1975, from George W. Bohn, Division Engineer; U.S. Dept. of Transportation, 125 South State Street, Salt Lake City, Utah

The proposed alignment for the Cove Fort Corridor follows very closely the corridor proposed. Close liaison between the BLM, UP&L, and the State Highway Department would eliminate the possibility of conflicts between the highway and transmission line rights-of-way. This is noted under "Transportation" part III, pages 93 and 94.

The Utah State Department of Highways was sent a copy of this draft statement, but no comment was received from that agency. This subject was discussed in the response to the Office of the Utah State Planning Coordinator.

Harold E. Isaacson

5010-108

*Buy U.S. Savings Bonds Regularly on the Payroll Savings Plan*

state of utah

**DIVISION OF WILDLIFE RESOURCES**

JOHN E. PHELPS
Director

1596 West North Temple / Salt Lake City, Utah 84116 / 801-328-5081

UTAH STATE OFFICE

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April 11, 1975

Paul
Mr. ~~Bob~~ Howard, State Director
Bureau of Land Management
Box No. 11505
Federal Building
125 South State
Salt Lake City, Utah 84111

Dear Mr. Howard:

Subject: Draft Environmental Statement, Siguard to Cedar City Power Transmission Line.

We have reviewed the above document and find that wildlife has been well protected and considered. However, from a deer habitat standpoint, the West Desert route would seem to cause the least damage but from an overall wildlife point of view we could support the Cove Fort route. We strongly oppose the Grass Valley route because more big game winter range, more waterfowl habitat and more upland game will be adversely affected.

It also is strongly urged that no equipment be allowed in streams crossed by the line and no poles or towers be built near any streambanks so as to increase siltation. All disturbed areas should be reseeded with native vegetation species. All work to be done in areas of high environmental impact should be done using helicopters.

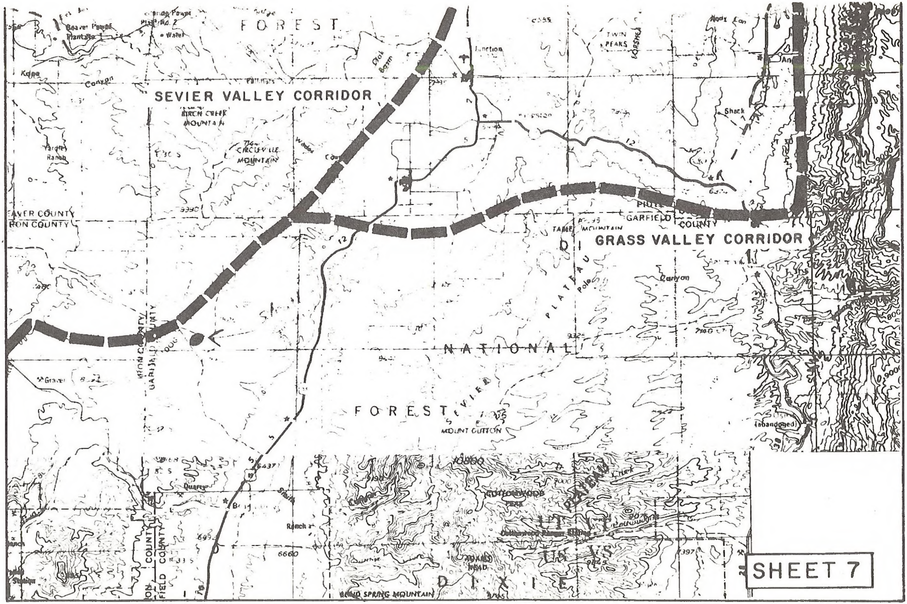
Also, it appears from the corridor map that the power line will pass through or at least very close to an important sage grouse strutting ground in Dog Valley near the Iron - Garfield County lines. A map is attached showing the proposed route and the strutting area. A good population of sage grouse can be found in this area throughout the year. Thus, we strongly urge that the power line be slightly altered in this area to protect the sage grouse. A slight modification would keep the line at least one mile from the strutting area.

We appreciate the opportunity to comment on this statement.

Sincerely,

Earl Sparks

Earl A. Sparks
Environmental Specialist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GRASS VALLEY CORRIDOR
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IRON COUNTY
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PIUTE COUNTY
IRON COUNTY
GARFIELD COUNTY
BIRCH CREEK MOUNTAIN
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OPTIONAL FORM NO. 10
MAY 1962 EDITION
GSA FPMR (41 CFR) 101-11.6

UNITED STATES GOVERNMENT

# *Memorandum*

TO : The Files

DATE: April 10, 1975

FROM : District Manager, Cedar City District

SUBJECT: Response Dated April 11, 1975, from Earl A. Sparks, Utah Division of Wildlife Resources

Paragraph 1 - These are recommendations on route selection. These comments will be considered when the final decision is made. At this time all impacts will be considered. The opposition of the Utah Division of Wildlife Resources has been noted and the text reflects their analysis except that the Sevier Valley corridor would impact more big game winter range than the Grass Valley routes. Geography on page 82 and 84. verifies this.

Paragraph 2 - Equipment will have to cross streams during construction and this is noted in the "adverse effects which cannot be avoided should the proposal be implemented." Final location of structures would be made after a corridor is selected. At this time consideration would be given to location of structures to mitigate all resource values in the immediate area. It is noted in the mitigating measures section that areas with high potential for success would be reseeded with native species.

It is noted in the mitigating measures on pages 102 and 103 that no roads would be allowed on the slopes east of the town of Monroe and in the steep canyons west of Circleville. Helicopters will be required on the half mile strip east of Monroe only. Construction activities could be accomplished in the Circleville area by following the high ridges and not crossing the deep canyons.

Paragraph 3 - As for the request to keep the power line at least one mile from a sage grouse strutting ground in Dog Valley, the proposed route through Dog Valley does pass at least one mile from the strutting ground located on the map attachment. This is further mitigated by limiting construction activities in sensitive wildlife habitat areas to nonsensitive periods. This is documented on pages 104.

Harold E. [illegible]

5010-108

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**UTAH MINING ASSOCIATION**
INCORPORATED
KEARNS BUILDING
SALT LAKE CITY, UTAH 84101
TELEPHONE (801) 364-1874

PAUL S. RATTLE
MANAGER

ERIC C. RYBERG
PRESIDENT
B. B. SMITH
VICE PRESIDENT
SEPH C. BENNETT
VICE PRESIDENT
SHIRL C. McARTHUR
VICE PRESIDENT

UTAH STATE OFFICE

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April 15, 1975

Mr. Paul L. Howard
State Director
Bureau of Land Management
P. O. Box 11505
Salt Lake City, Utah 84111

Dear Paul:

Thank you for sending me a copy of your Draft Environmental Statement on the proposed Sigurd-Cedar City Power Transmission Line. This does indeed represent an enormous amount of work. You will recognize that we are not directly concerned with this project except that current and possible future mining operations will certainly require power in the areas that might be served by this line. This Draft EIS does, however, serve to point up a number of issues that I feel should be recognized at this time - both as to this specific statement, and others of a similar nature.

1. This proposed power line will tend to serve populations along its path and the environmental impacts of its construction and operation will tend to be felt by these same groups and relatively few other people. Very little is mentioned in the EIS about the points of view held by these people, their local governments and elected representatives in the areas through which the transmission line might pass. Some "public hearings" apparently have been held with limited expressed interests; however, I suggest that while such hearings should continue to be held, they should not be the initial primary source for the development of needed data for this purpose.

2. The local power company that is planning to build the line is undertaking the project as a part of its responsibility to supply power into its service areas. Planning for such projects - a long term enterprise requiring commitment of large amounts of capital - is a very complex process with respect to which the power company and probably only the power company has the required expertise. Economics plays an extremely important factor. I suggest that their recommendations and desires should be primary in terms of where the line is located.

3. Although considerable public land may be involved in any transmission line route selected, there are also extensive private and state lands involved. These lands and their owners are apparently given little consideration in the EIS. This factor relates to point 1, above.

4. An enormous volume of almost stereotyped detail is provided in the statement but I fail to get a good feel for any really environmentally sensitive areas that might be traversed by the line and how these impacts might be minimized. Perhaps there are none.

Again, thanks for sending me a copy of the statement.

Cordially,

Paul

Paul S. Rattle

c.c. UMA Officers

OPTIONAL FORM NO. 10
MAY 1962 EDITION
GSA FPMR (41 CFR) 101-11.6

UNITED STATES GOVERNMENT

# *Memorandum*

**TO** : The Files **DATE:** 21 April 1975

**FROM** : District Manager, Cedar City District

**SUBJECT:** Response dated 15 April, 1975 from Mr. Paul S. Rattle, Utah Mining Association

*1. The BLM made an effort to get input from people who would be directly affected by the proposed power line. Public meetings were held in Cedar City and Richfield. The meetings were well publicized by the local papers and radio stations, but relatively few people attended. The draft EIS was distributed to local government and elected officials for comments. Although brief, Part IX of the statement on page 121 does spell out the feeling of the people, local governments, and elected representatives in the area which is to be served by the proposed line; the feeling is that additional electrical energy is denied.

2. The Environmental Impact Statement is one of many factors that the BLM will use in determining the action to be taken. The recommendations and desires of the power company as well as the economic situation will be considered in a decision-making document which will follow the EIS.

3. The private and state lands involved are not given a great deal of attention in the EIS because during the course of the analysis, no controversy or opposition regarding this subject surfaced. The amount of cultivated and residential land involved with each of the corridor alternatives is identified in the Description of the Environment. Maps of the proposed corridor routes were displayed at the public meetings and were included in the draft EIS and none of the property owners who may have seen these maps made any comments. The State Division of Lands was invited to review the draft EIS but chose not to comment.

4. The Environmental Impact Statement contains considerable detail as required by federal law and regulations. The EIS contains data on known environmental impacts. In the analysis of these impacts (Chapter III) our best efforts were made to identify environmentally sensitive areas likely to be impacted by the proposal. Where possible, these impacts were quantified.

* Numbers correspond to numbers in letter from Mr. Rattle.

Harold E. Isaacson

5010-108

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721 2nd Ave
Salt Lake City
Utah 84103

9 April 1975

Bureau of Land Management
State Office of Utah
PO Box 11505
Salt Lake City
Utah 84111

Dear Sir:

This letter concerns the Draft Environmental Statement concerning the proposed Sigurd to Cedar City Power Transmission Line.

It seems that without the power line, growth is limited to Cedar City and St. George. Yet if growth is permitted, sewage treatment plants and water treatment plants are needed (usually built with Federal Funds and require an EIS). Iron County is particularly bad in unregulated growth and quite good in bad planning( the Summit development).

Environmentalists would also like to see a Master Plan for Utility Growth and transmission lines and Plant sites for the next 50 years. All we get is piecemeal operations. Such is the proposed Sigurd to Cedar City transmission line. Is there going to be another transmission line passing the same region to different destination in the years to come? Or will there be another transmission line passing the same destination (on the way to California) from a different source? These questions probably have no answer and are slightly dealt with in the draft statement. Yet there should be a Master Plan for the Utility lines. It is my feeling that there are a needless number of lines hocking up to every possible combination in a jig-saw puzzle.

In the Cove Fort corridor, very little was mentioned of the proposed I-70 developments. Is not I-70 suppose to be constructed in the same corridor? I-70 would have a far greater impact on the region than the proposed transmission line.

On page 17 mention is made about increasing costs of fossil fuels. Do not the power companies generate electricity from coal and fossil fuels and experience the increasing costs also?

On page 18 why does not St. George keep purchasing power from the Bureau of Reclamation after 1977 or is UPL just furnishing additional power?

Roads to power poles have been very badly planned as witness by the Parley Canyon transmission lines. Are the proposed roads being better planned?

P 117 under recreation, I did not think that I-70 or any Interstate highway was a recreational road. Interstate 70 probably has destroyed more recreation and grazing than any other highway. If I-70 will be adversely affected by transmission facilities, will the transmission facilities (which has far less of an impact) be adversely affected by I-70? I-70 is already one of the biggest atrocity to have happened to the Colorado Plateau since the last dam was built. On page 118 again, new recreational and home developments would be adversely affected. Yet recreational home are also an atrocity to Land-use planning. This transmission line is suppose to serve growth. It seems that since transmission lines adversely affect I-70 and recreation and home development, and that I-70, and recreation and home development adversely affect the transmission line, it seems that all these developments should not be permitted!

Page 124: Roads built for power line construction and maintenance would not help meet transportation objectives. Could not this be changed by construction of the transmission line along a frontage road of I-70? and I-15?

Page 130: All slash debris will be removed or burned under controlled conditions. Can not everything be chipped and shredded?

Page 132: Historical and Archaeological values. Over what area will the grantee make a survey and inventory of archaeological, paleontological, and historical sites? Since ORV will be the main users of the maintenance roads, it seems that the survey should cover a rather extensive area.

Page 136: Cove Fort Corridor has the distubed deer winter range which would respond to reseeding. Would I-70 affect this also?

It sometimes seems that great effort is made to avoid an impact on housing, recreation, and roads and the great effort insteads makes an even greater impact on the back country. Then when the time comes to evaluate the back country, there are all these developments already constructed within it. Highways kill more wildlife than any other kind of corridor and the affect of a transmission line near a highway on wildlife would be insignificant except for the raptors that feed on the carrion. Your report did evaluate the raptor problem. it is unfortunate that Utahns enjoy shooting raptors from the transmission lines.

Sincerely,

Peter Hovingh

Peter Hovingh

Escalante Wilderness Committee

OPTIONAL FORM NO. 10
MAY 1962 EDITION
GSA FPMR (41 CFR) 101-11.6

UNITED STATES GOVERNMENT

# *Memorandum*

TO : The Files

DATE: April 10, 1975

FROM : District Manager, Cedar City District Office

SUBJECT: Response Dated 9 April 1975, from Peter Hovingh, Escalante Wilderness Committee

Paragraph 1 - requires no comment.

Paragraph 2 - Pages 98 and 99 address the subject that Cedar City and St. George need additional electrical energy for the growth of these communities and surrounding area. In assessing the impacts of the power line proposal, culinary water and sewer treatment facilities were not identified on limiting factors to growth of the area. This is not included in the scope of this statement.

Paragraph 3 - The need raised in paragraph 3 for a long range look at all of the proposals for power plants and transmission lines in southern Utah is recognized by the BLM. Studies have been initiated and full public participation will be requested as they develop. The interrelationships with other projects section of this EIS has been modified to address this topic on pages 19 through 22.

Paragraph 4 - At the present time the location of I-70 in the Sevier Valley has not been decided. Three alternatives are under consideration. One suggested alignment would closely parallel the proposed Sevier Valley and Cove Fort transmission line corridors. The close liaison that exists between the BLM, Utah Power and Light and the State Highway Department in determining highway location would eliminate the possibility of physical conflicts between highway and transmission line right-of-way.

Paragraph 5 - Power companies are faced with increasing costs of fossil fuels as well as on the individual consumer. The scope of this statement does not include the generation of power, only the transmission of power from Sigurd to Cedar City. Thus, impact of fuel costs is not included.

Paragraph 6 - By 1977 St. George city will reach their full allocation of power from the Bureau of Reclamation and this cannot be increased. The additional requirements will be provided by Utah Power and Light.

Paragraph 7 - Under the mitigating measures section pages 101 through 103 the restrictions on road construction are outlined.

Harold E. Isaacson

5010-108

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Paragraph 8 - This paragraph contains comments on the adverse effects of all development, highways, home development etc. on the environment. The scope of this statement is the contraction and operations of the proposed power line. Impacts associated with other projects or developments will have to be made by the responsible agent. The statement that I-70 is identified as a recreational road is wrong. Adverse effects of transmission facilities located in view areas of highways were mentioned. These impacts are noted on pages 93 and 94 of this document.

Paragraph 9 - Under mitigating measures, pages 101 and 102 existing roads will be used where feasible. The response to paragraph 4 also covers this item.

Paragraph 10 - Almost everything can be chipped and shredded except where the shredder cannot operate due to rough terrain. See mitigating measures section, page 103

Paragraph 11 - The archaeological survey would cover all areas in the corridor that might be directly impacted by construction and maintenance of the line. Mitigating measures on pages 105 and 106 note this.

Paragraph 12 - The effects of I-70 on deer winter range would have to be assessed by the appropriate agency.

Paragraph 13 - Impacts on all resources and losses of land have been evaluated. Note is taken on the concern of the impacts to back country along the proposed routes. All resource values and the need for additional power will be considered when a decision is made.

Harold E. Sorenson

UTAH STATE OFFICE

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Action:
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STATE OF UTAH
Calvin L. Rampton, Governor
**DEPARTMENT OF DEVELOPMENT SERVICES**
Division of State History
Melvin T. Smith, Director
603 East South Temple
Salt Lake City, Utah 84102
Telephone: (801) 328-5755

October 21, 1974

Mr. William G. Leavell
Associate State Director
Utah State Office
Bureau of Land Management
P.O. Box 11505
Salt Lake City, Utah 84111

Dear Mr. Leavell:

We have reviewed the proposed Sigurd to Cedar City transmission line corridors and find that there would be no impact on sites either listed on or eligible for listing on the National Register of Historic Places by the construction of transmission lines within those corridors.

Sincerely,

Kent Powell

Kent Powell
Preservation Historian

KP/md

STATE HISTORY BOARD: Dr. Milton C. Abrams, Chairman • Theron H. Luke • Juanita Brooks Cleo L. Jensen Howard C. Price, Jr.
Dr. Dello G. Dayton Dr. Richard O. Ulibarri • Helen Z. Papanikolas • Clyde L. Miller Elizabeth Skanchy Naomi Woolley

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Proposed Sigurd to
City power transm

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